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(continued)

APPENDICES

CONSTRUCTION SITE STORM WATER CONTROL PLAN

1.01 GENERAL

A. The purpose of this Storm Water Pollution Prevention Plan (SWPPP) is to reduce erosion and control runoff of stormwater from the facility. This Plan shall be closely followed in order to comply with all State of Tennessee, Department of Environment and Conservation, Division of Water Pollution Control Rules and Regulations, hereinafter referred to as the *Division*. **A copy of this Plan shall be kept onsite at all times.**

B. This Plan addresses discharges of storm water runoff from land disturbed by construction activity, including clearing, grading and excavation, except operations that result in the disturbance of less than one acre of total land area, which are not part of a larger common plan of development or sale. It also applies to dewatering discharges from work areas at construction sites.

C. The term "*Permittee*" shall mean the Owner who has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications.

D. The term "*Operator*" shall mean the Contractor with day-to-day operational control of those activities at a project which are necessary to ensure compliance with this Plan and permit conditions.

1.02 STORM WATER CONTROL

A. Contractors of the *Permittee*, whose activities at the site may impact storm water discharges or controls, shall affirm, by signature of one who meets signatory requirements of this Plan.

B. The *Permittee* shall certify that the named Contractor has been retained to perform the described construction-related services.

1.03 SUBMISSION OF PLAN

A. A Notice of Intent (NOI) shall be submitted by the *Permittee* at least **30 days prior to the commencement of construction activities** (i.e., the initial disturbance of soils associated with clearing, grading, excavation activities, or other construction activities).

B. The NOI shall be prepared on the form provided in **Appendix B** of this Plan.

C. The *Operator(s)* of the construction site shall sign the NOI. Persons who sign shall meet the criteria set forth in the "General Provisions" of this Plan, which is located on Page 9.

D. The *Division* will review the NOI for completeness and accuracy and as necessary will investigate the project for possible impact to threatened and endangered species of aquatic fauna. Upon completing the review, the *Division* will transmit a Notice of Coverage (NOC) to the *Permittee*.

E. The NOC is a written notice from the Division of Water Pollution Control informing the *Permittee* that the NOI was received and has been approved by the *Division*. The *Operator* shall post near the main entrance of the construction site the following information:

1. A copy of the Notice of Coverage (NOC) with the NPDES permit number for the project;

2. The name and telephone number of a local contact person;

3. A brief description of the project; and

4. The location of the SWPPP if the site is inactive or does not have an on-site location to store the Plan.

F. If posting this information near a main entrance is infeasible due to safety concerns, the notice shall be posted in a local public building. If the construction project is a linear construction project (e.g., pipeline, highway, etc.), the notice must be placed in a publicly accessible location near where the construction is actively underway and moved as necessary.

1.04 PROCEDURE TO TERMINATE COVERAGE

A. When the construction activity is finished and stable perennial vegetation has been established on all remaining exposed soil, the *Permittee* shall submit a Notice of Termination (NOT) to the *Division* to request termination of coverage under the permit.

B. The NOT shall be submitted on the *Division's* form provided in **Appendix B** of this Plan and forwarded to the appropriate Environmental Assistance Center.

C. The *Division* may inspect the site and require additional measures to stabilize the soil and prevent erosion. If the requirement is given by letter, the *Permittee* continues to be covered under the terms of the permit until a request for termination has been accepted by the *Division*.

CONDITIONS FOR DISCHARGE PERMIT

1.01 CONSTRUCTION MANAGEMENT TECHNIQUES

A. The construction phase erosion and sediment controls shall be designed to retain sediment on site.

B. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections or other information indicates a control has been used inappropriately, or incorrectly, the *Operator* must replace or modify the control for site situations.

C. If sediment escapes the construction site, off-site accumulations of sediment that have not reached a stream must be removed at a frequency sufficient to minimize offsite impacts (e.g., fugitive sediment that has escaped the construction site and has collected in street must be removed so that it is not subsequently washed into storm sewers and streams by the next rain and/or so that it does not pose a safety hazard to users of public streets). *Operators* shall not initiate remediation/restoration of a stream without consulting the *Division* first. This permit does not, however, authorize access to private property.

D. Sediment should be removed from sediment traps, silt fences, sedimentation ponds, and other sediment controls as necessary, and must be removed when design capacity has been reduced by 50%.

E. Litter, construction debris, and construction chemicals exposed to storm water shall be picked up prior to anticipated storm events (e.g. forecasted by local weather reports), or otherwise prevented from becoming a pollutant source for storm water discharges (e.g., screening outfalls, daily pick-up, etc). After use, silt fences should be removed or otherwise prevented from becoming a pollutant source for storm water discharges.

F. Offsite material storage areas (also including overburden and stockpiles of dirt, etc.) used solely by the permitted project are considered a part of the project and is addressed in this Plan.

G. Pre-construction vegetative ground cover shall not be destroyed, removed or disturbed more than **20 calendar days** prior to grading or earth moving unless the area is seeded and/or mulched or other temporary cover is installed.

H. Clearing and grubbing must be held to the minimum necessary for grading and equipment operation.

I. Construction must be sequenced to minimize the exposure time of graded or denuded areas.

J. Construction must be phased for projects in which over 50 acres of soil will be disturbed. Areas of the completed phase must be stabilized within 21 days after another phase has been initiated.

K. Erosion and sediment control measures must be in place and functional before earth moving operations begin, and must be constructed and maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but must be replaced at the end of the work day.

L. The following records shall be maintained on site:

1. Dates when major grading activities occur;

2. Dates when construction activities temporarily or permanently cease on a portion of the site; and

3. Dates when stabilization measures are initiated.

M. A specific individual shall be designated by the *Operator* to be responsible for erosion and sediment controls on each project site.

N. All control measures shall be checked, and repaired as necessary, **twice weekly** in dry periods and within **24 hours** after any rainfall of 0.5 inches within a 24 hour period. During prolonged rainfall, daily checking and repairing is necessary. The *Operator* shall maintain records of checks and repairs.

1.02 STABILIZATION PROCEDURES

A. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than **seven days** after the construction activity in that portion of the site has temporarily or permanently ceased. Except in the following two situations:

1. Where the initiation of stabilization measures by the **seventh day** is precluded by snow cover or frozen ground conditions, stabilization measures shall be initiated as soon as practicable; or

2. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within **15 days**, temporary stabilization measures do not have to be initiated on that portion of site.

B. Temporary or permanent soil stabilization shall be accomplished **within 15 days** after final grading or other earth work. Permanent stabilization with perennial vegetation (using native herbaceous and woody plants where practicable) or other permanently stable, non-eroding surface shall replace any temporary measures as soon as practicable.

1.03 STRUCTURAL CONTROLS

A. Structural controls shall not be placed in streams or wetlands except as authorized by a U. S. Army Corps of Engineers Section 404 permit and/or Tennessee Aquatic Resource Alteration Permit (ARAP).

B. Erosion and sediment control measures shall be designed according to the size and slope of disturbed or drainage areas to detain runoff and trap sediment. In addition, erosion and sediment controls shall be designed to control the rainfall and runoff from a 2 year, 24 hour storm, as a minimum. *Operator* shall maintain a rain gauge at the site.

C. For common drainage locations that serve an area with 10 or more acres disturbed at one time, a temporary (or permanent) sediment basin that provides storage for a calculated volume of runoff from a 2 year, 24 hour storm and runoff coefficient from each disturbed acre drained, or equivalent control measures, shall be provided where attainable until final stabilization of the site. Where no such calculation has been performed, a temporary (or permanent) sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent control measures, shall be provided until final stabilization of the site. When computing the number of acres draining into a common location, it is necessary to include flows from offsite areas and flows from onsite areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage locations which serve 10 or more disturbed acres at one time and where a temporary sediment basin providing 3,600 cubic feet of storage per acre drained, or equivalent controls are not attainable, multiple, smaller sediment basins and/or sediment traps must be used.

D. Discharges from sediment basins and traps must be through a pipe, well grassed or lined channel so that the discharge does not cause erosion.

E. Muddy water to be pumped from excavation and work areas must be held in settling basins or filtered prior to its discharge into surface waters. Water must be discharged through a pipe, well grassed or lined channel or other equivalent means so that the discharge does not cause erosion and sedimentation.

1.04 STORM WATER MANAGEMENT

A. Measures shall be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. Such measures may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff onsite; and sequential systems (which combine several practices).

B. Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel to provide a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving water).

1.05 MISCELLANEOUS CONTROLS

A. Off-site vehicle tracking of sediments and the generation of dust shall be minimized.

B. For installation of any waste disposal systems on site, or sanitary sewer or septic system, measures should be provided for the necessary sediment controls. *Operator* must also comply with applicable State and/or local waste disposal, sanitary sewer or septic system regulations for such systems to the extent these are located within the permitted area.

C. A description of all construction and waste materials expected to be stored on-site with updates as appropriate shall be maintained. Controls shall be established to reduce pollutants from these materials including storage practices to minimize exposure of the materials to storm water, and spill prevention and response.

1.06 MAINTENANCE

A. Maintenance needs identified in inspections or by other means shall be accomplished before the next storm event if possible, **but in no case more than seven days** after the need is identified. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.

1.07 INSPECTIONS

A. Inspections shall be done before anticipated storm events (or series of storm events such as intermittent showers over one or more days), **and within 24 hours** after the end of a storm event of 0.5 inches or greater, and at least **once every fourteen calendar days**. Where sites have been finally or temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow, ice, or frozen ground), such inspection only has to be conducted **once per month**.

B. Inspections and associated, necessary repairs done **60 hours** before a rain event constitute compliance with "before anticipated storm events," and inspections and repairs on a Friday meet the requirement for rain events over the weekend.

C. Qualified personnel (provided by the *Operator* or cooperatively by multiple *Operators*) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, and locations where vehicles enter or exit the site.

D. Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly.

E. Outfall points (where discharges from the site enter streams or wet weather conveyances) shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected if possible. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

F. Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than **seven days** after the need is identified. If maintenance prior to the next anticipated storm event is impracticable, maintenance must be scheduled and accomplished as soon as practicable.

G. Based on the results of the inspection, this storm water plan may be revised as appropriate, but in no case later than **14 calendar days** following the inspection. Such modifications shall provide for timely implementation of any changes to the Plan in no case later than **21 calendar days** following the inspection.

H. Inspections shall be documented and include the scope of the inspection, name(s) and title or qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the Storm Water Pollution Prevention Plan (including the location(s) of discharges of sediment or other pollutants from the site and of any control device that failed to operate as designed or proved inadequate for a particular location), and actions taken.

1.08 REPORTING AND RECORDKEEPING REQUIREMENTS

A. The *Permittee* shall retain copies of the Storm Water Pollution Prevention Plan and all reports required by this permit, and records of all data used to complete the Notice of Intent to be covered by this permit, for a period of at least three years from the date the Notice of Termination is filed. This period may be extended by written request of the *Division*.

B. The *Permittee* shall retain a copy of the Storm Water Pollution Prevention Plan required by this permit (including a copy of the permit language) at the construction site (or other local location accessible to the *Division* and the public) from the date construction commences to the date of final stabilization. The *Operator* with day-to-day operational control over pollution prevention plan implementation shall have a copy of the Plan available at a central location onsite for the use of all operators and those identified as having responsibilities under the Plan whenever they are on the construction site.

C. The *Operator* must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act and is grounds for enforcement action; for termination of permit coverage, or for denial of a permit renewal application.

D. This permit expires **five years** after the effective date. However, an expired general permit may continue in force and effect until a new general permit replaces the expired one. To retain coverage under the continued permit, *Permittees* should provide notice of their intent to remain covered under this permit at least **30 days** prior to the expiration data. Coverage under the expired general permit will terminate **90 days** after the effective date of a new general permit that replaces the expired one. The notice must be signed in accordance with the General Provision of this Plan and must contain the following information: (1) name, address and telephone number of the operator, and (2) the existing storm water construction permit number.

E. When the *Permittee* becomes aware that he or she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report to the *Division*, he or she shall promptly submit such facts or information.

GENERAL PROVISIONS

1.01 SIGNATORY REQUIREMENTS

A. A Notice of Intent submitted to the *Division* shall be signed as follows:

1. For a corporation, by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

   (a) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation; or

   (b) the manager of one or more manufacturing, production or operating facilities employing more than 250 persons or having gross annual sales or expenditures exceeding $25,000,000 (in second-quarter 1980 dollars) if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

2. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or

3. For a municipality, State, Federal, or other public agency, by either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes (1) the chief executive officer of the agency, or (2) a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency.

B. All reports required by the permit and other information requested by the *Division* or authorized representative of the *Division* shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

1. The authorization is made in writing by a person described above and submitted to the *Division*.

2. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).

3. Changes to authorization. If an authorization is no longer accurate because a different operator has responsibility for the overall operation of the construction site, a new Notice of Intent satisfying the requirements must be submitted to the *Division* prior to or together with any reports, information, or applications to be signed by an authorized representative.

4. The *Permittee* is required to sign an NOI certification. This certification must precede the signature on any report to be signed and submitted pursuant to this permit:

"I certify under penalty of law that this document and all attachments were prepared under by direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

5. Construction contractors required to sign an NOI because they meet the definition of an operator but who are not primarily responsible for preparing an NOI, shall sign the following certification statement on the NOI:

"I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this Notice of Intent, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities onsite are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, for failure to comply with these permit requirements."

1.02 PENALTIES FOR FALSIFICATION OF REPORTS

A. Knowingly making any false statement on any report required by this permit may result in the imposition of criminal penalties as provided for in Section 309 of the Clean Water Act and in T.C.A. § 69-3-115 of the Tennessee Water Quality Control Act.

1.03 OIL AND HAZARDOUS SUBSTANCE LIABILITY

A. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the *Operator* from any responsibilities, liabilities, or penalties to which the *Operator* is or may be subject under Section 311 of the Clean Water Act or Section 106 of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA).

B. The *Operator* is required to notify the National Response Center (NRC) (800-424-8802) and the Tennessee Emergency Management Agency (emergencies: 800-262-3300; non-emergencies: 800-262-3400) in accordance with the requirements of 40 CFR 117 and 40 CFR 301 as soon as he or she has knowledge of the discharge.

C. The *Permittee* shall **submit within 14 calendar days of knowledge of the release** a written description to the appropriate Environmental Assistance Center of:

1. The release (including the type and estimate of the amount of material released);

2. The date that such release occurred;

3. The circumstances leading to the release;

4. What actions were taken to mitigate effects of the release; and

5. Steps to be taken to minimize the chance of future occurrences.

D. The Storm Water Pollution Prevention Plan must be modified within **14 calendar days** of knowledge of the release to provide a description of the release, the circumstances leading to the release, and the date of the release. In addition, the Plan must be reviewed to identify measures to prevent reoccurrence of such releases and to respond to such releases, and the place must be modified where appropriate.

1.04 DISCHARGE QUALITY

A. The construction activity shall be carried out in such a manner as will prevent violations of water quality criteria as stated in Rule 1200-4-3-.03 of the Rules of the Tennessee Department of Environment and Conservation. This includes but is not limited to the prevention of any discharge that causes a condition in which visible solids, bottom deposits, or turbidity impairs the usefulness of waters of the state for any of the uses designated for that water body by Rule 1200-4-4. Use classifications for surface waters include fish and aquatic life, livestock watering and wildlife, recreation, irrigation, navigation, industrial water supply, and domestic water supply.

B. There shall be no distinctly visible floating scum, oil or other matter contained in the storm water discharge.

C. The storm water discharge must not cause an objectionable color contrast in the receiving stream.

D. The storm water discharge must result in no materials in concentrations sufficient to be hazardous or otherwise detrimental to humans, livestock, wildlife, plant life, or fish and aquatic life in the receiving stream.

E. No solid materials, including building materials, shall be discharged to waters of the United States, except as authorized by a U. S. Army Corps of Engineers Section 404 permit and/or Tennessee Aquatic Resource Alteration Permit (ARAP).

1.05 PROPERTY RIGHTS

A. The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations. The issuance of this permit does not authorize trespassing or discharges of storm water or non-storm water across private property.

1.06 SEVERABILITY

A. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstances, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

1.07 OTHER, NON-STORM WATER, PROGRAM REQUIREMENTS

A. No condition of this permit shall release the *Operator* from any responsibility or requirements under other environmental statues or regulations.

1.08 PROPER OPERATION AND MAINTENANCE

A. The *Operator* shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the *Operator* to achieve compliance with the conditions of this permit and with the requirements of the Storm Water Pollution Prevention Plan.

B. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by an *Operator* only when necessary to achieve compliance with the conditions of the permit.

1.09 INSPECTION AND ENTRY

A. The *Operator* shall allow authorized representatives of the Environmental Protection Agency, the *Division of Water Pollution Control,* or an authorized representative of the *Division,* or, in the case of a construction site which discharges through a municipal separate storm sewer, an authorized representative of the municipal operator or the separate storm sewer receiving the discharge, upon the presentation of credentials and other documents as may be required by law:

1. To enter upon the *Permittee's* premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit.

2. To have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and

3. To inspect any facilities or equipment (including monitoring and control equipment).

1.10 PERMIT ACTIONS

A. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the *Permittee* for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

1.11 LIABILITIES

A. Civil and criminal liability

1. Except as provided in this permit, nothing in this permit shall be construed to relieve the *Operator* from civil or criminal penalties for noncompliance. Notwithstanding this permit, the *Operator* shall remain liable for any damages sustained by the State of Tennessee, including but not limited to fish kills and losses of aquatic life and/or wildlife, as a result of the discharge of waste water to any surface or subsurface waters. Additionally, notwithstanding this permit, it shall be the responsibility of the discharger to conduct its waste water

treatment and/or discharge activities in a manner such that public or private nuisances or health hazards will not be created.

B. Liability under State law

1. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the *Operator* from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or the Federal Water Pollution Control Act, as amended.

1.12 CHANGES AFFECTING COVERAGE

A. In a case where one or more of the *Operators* changes during the course of a construction project, the *Permittee* shall submit new NOIs.

B. For storm water discharges from construction sites where the *Operator* changes, or projects where an *Operator* is added after an initial NOI has been submitted as above, an NOI in accordance with the requirements should be submitted as soon as practicable and **at least 48 hours prior to when the new operator assumes operational control** over site specifications or commences work at the site.

C. When a late NOI is submitted, authorization is only for future discharges, and prior, unpermitted discharges are subject to the liabilities section of this Plan.

D. Whenever there is a change in the scope of the project, which would be expected to have a significant affect on the discharge of pollutants to the waters of the State and which has not otherwise been addressed in the Plan, the *Permittee* shall amend this Plan.

E. Whenever inspections or investigations by site operators, local, State or Federal officials indicate the Storm Water Pollution Prevention Plan is proving ineffective in eliminating or significantly minimizing pollutants from sources identified under this permit, or is otherwise not achieving the general objectives of controlling pollutants in storm water discharges associated with construction activity, the Plan shall be amended.

F. Amendments to the Plan should be implemented when measures become necessary to prevent a negative impact to legally protected state or federally listed or proposed threatened or endangered aquatic fauna.

1.13 TERMINATION OF COVERAGE

A. Notice of Termination (NOT)

1. Where a site has been finally stabilized and all storm water discharges from construction activities that are authorized by this

permit are eliminated, or where storm water discharges have otherwise been eliminated, or where the operation of all storm water discharges at a facility changes, the *Permittee* must submit a Notice of Termination (NOT) that is signed in accordance with this Plan.

2. The *Permittee* must submit the NOT after completion of the construction activities and final stabilization of the site, **or within 30 days** after another operator has taken over the responsibilities of the site. Appropriate enforcement actions may be taken for permit violations when a *Permittee* submits a NOT but the *Permittee* has not transferred operational control to another *Operator* or the site has not undergone final stabilization.

3. The NOT shall be submitted on the *Division's* NOT form provided in **Appendix B** of this permit.

4. The *Operator* shall sign the following certification in accordance with the signatory requirements of this Plan:

"I certify under penalty of law that either: (a) all storm water discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this Notice of Termination, I am no longer authorized to discharge storm water associated with construction activity under this general permit, and that discharging pollutants in storm water associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act."

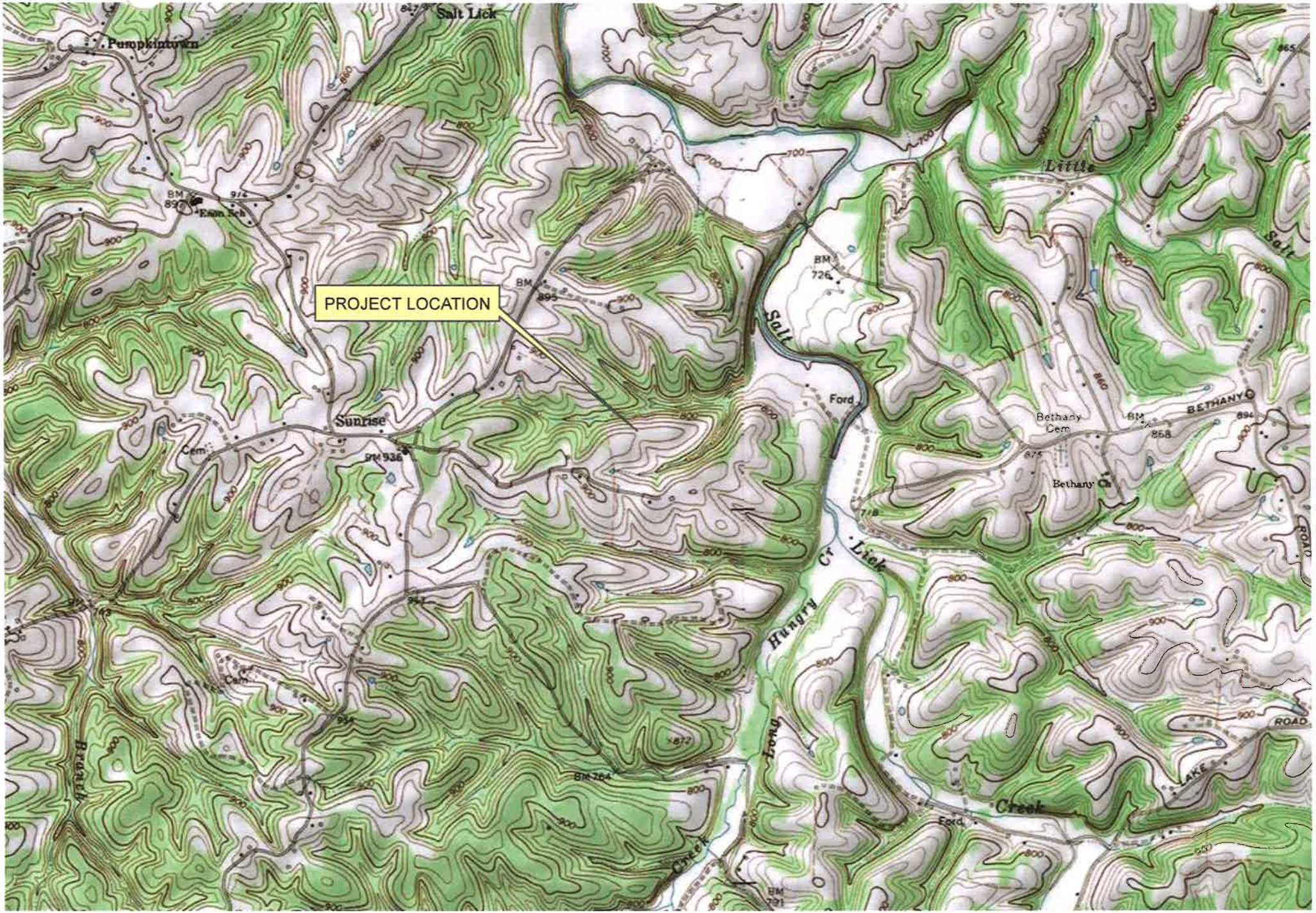
4. For the purposes of this certification, elimination of storm water discharges associated with construction activity means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized and temporary erosion and sediment control measures have been removed or will be removed at an appropriate time to insure final stabilization is maintained, or that all storm water discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have otherwise been eliminated from the portion of the construction site where the operator had control.

1.14 ADDRESSES

A. All Notices of Termination are to be sent, using the form provided in this Plan, to the address of the appropriate Environmental Assistance Center below:

Tennessee Department of Environment and Conservation
Environmental Assistance Center
1221 South Willow Avenue
Cookeville, Tennessee 38506

U.S.G.S. Location Map



0 1,000 2,000 4,000 Feet

MID-TERN ENGINEERING

Soil Map—Macon County, Tennessee
(Heath Dodson SWPPP)

Map Scale: 1:2,810 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 40 80 160 240

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Macon County, Tennessee
Survey Area Data: Version 7, Dec 21, 2013

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 8, 2011—Oct 22, 2011

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Macon County, Tennessee (TN111)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
HaD	Hawthorne gravelly silt loam, 12 to 25 percent slopes	1.8	39.8%
HaF	Hawthorne gravelly silt loam, 25 to 55 percent slopes	0.1	1.9%
SrC2	Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded	2.6	58.3%
Totals for Area of Interest		**4.5**	**100.0%**

Macon County, Tennessee

HaD—Hawthorne gravelly silt loam, 12 to 25 percent slopes

Map Unit Setting

National map unit symbol: kq3n
Elevation: 900 to 1,300 feet
Mean annual precipitation: 48 to 55 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 185 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Hawthorne and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hawthorne

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Gravelly residuum weathered from limestone and siltstone

Typical profile

H1 - 0 to 7 inches: gravelly silt loam
H2 - 7 to 25 inches: very channery silt loam
Cr - 25 to 35 inches: bedrock

Properties and qualities

Slope: 12 to 25 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: B

Data Source Information

Soil Survey Area: Macon County, Tennessee
Survey Area Data: Version 7, Dec 21, 2013

Macon County, Tennessee

HaF—Hawthorne gravelly silt loam, 25 to 55 percent slopes

Map Unit Setting

National map unit symbol: kq3p
Elevation: 900 to 1,300 feet
Mean annual precipitation: 48 to 55 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 185 to 205 days
Farmland classification: Not prime farmland

Map Unit Composition

Hawthorne and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hawthorne

Setting

Landform: Hillslopes
Landform position (three-dimensional): Side slope
Parent material: Gravelly residuum weathered from limestone and siltstone

Typical profile

H1 - 0 to 7 inches: gravelly silt loam
H2 - 7 to 25 inches: very channery silt loam
Cr - 25 to 35 inches: bedrock

Properties and qualities

Slope: 25 to 55 percent
Depth to restrictive feature: 20 to 39 inches to paralithic bedrock
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: B

Data Source Information

Soil Survey Area: Macon County, Tennessee
Survey Area Data: Version 7, Dec 21, 2013

Macon County, Tennessee

SrC2—Sugargrove gravelly silt loam, 5 to 12 percent slopes, eroded

Map Unit Setting

National map unit symbol: kq48
Elevation: 700 to 900 feet
Mean annual precipitation: 48 to 54 inches
Mean annual air temperature: 57 to 61 degrees F
Frost-free period: 180 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Sugargrove and similar soils: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sugargrove

Setting

Landform: Ridges
Landform position (three-dimensional): Crest
Parent material: Loamy residuum weathered from limestone and siltstone

Typical profile

H1 - 0 to 7 inches: gravelly silt loam
H2 - 7 to 31 inches: gravelly silty clay loam
H3 - 31 to 50 inches: very gravelly silty clay
Cr - 50 to 60 inches: bedrock

Properties and qualities

Slope: 5 to 12 percent
Depth to restrictive feature: 39 to 59 inches to paralithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e

Hydrologic Soil Group: B

Data Source Information

Soil Survey Area: Macon County, Tennessee
Survey Area Data: Version 7, Dec 21, 2013

TR 55 Worksheet 2: Runoff Curve Number and Runoff

Project: Dodson Farms Poultry House Designed By: EJW Date: 9/12/14

Location: Red Boiling Springs, TN Checked: CAB Date: 9/12/14

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (Cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN [1/]			Area ■ acres ☐ mi² ☐ %	Product of CN x area
		Table 2-2	Fig. 2-3	Fig. 2-4		
SrC2, B	Building	98			0.9	89.2
HaD, B	Gravel	85			1.1	92.7
HaF, B	Pasture, Fair Conditon	69			2.5	172.5
					Totals =	
					4.5	354.3

[1/] Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{354.3}{4.5} =$ 79 Use CN = 79

2. Runoff

	Storm #1	Storm #2	Storm #3
Frequency ..... years	2	25	
Rainfall, P (24 hour) ..... in.	3.6	6.0	
Runoff, Q ..... in.	1.6	3.7	

(Use P and CN with Table 2-1, Figure 2-1, or equations 2-3 and 2-4.)

TR 55 Worksheet 2: Runoff Curve Number and Runoff

Project: Dodson Farms Poultry House Designed By: EJW Date: 9/12/1

Location: Red Boiling Springs, TN Checked: CAB Date: 9/12/1

Check one: ☐ Present ☑ Developed

1. Runoff curve number (CN)

Soil name and hydrologic group (Appendix A)	Cover description (Cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/			Area ■ acres ☐ mi² ☐ %	Product of CN x area
		Table 2-2	Fig. 2-3	Fig. 2-4		
SrC2, B	Building	98			0.9	89.2
HaD, B	Gravel	85			1.1	92.7
HaF, B	Pasture, Fair Conditon	69			2.5	172.5
				Totals =	4.5	354.3

1/ Use only one CN source per line.

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{354.3}{4.5} =$ 79 Use CN = 79

2. Runoff

	Storm #1	Storm #2	Storm #3
Frequency ..... years	2	25	
Rainfall, P (24 hour) ..... in.	3.6	6.0	
Runoff, Q ..... in.	1.6	3.7	

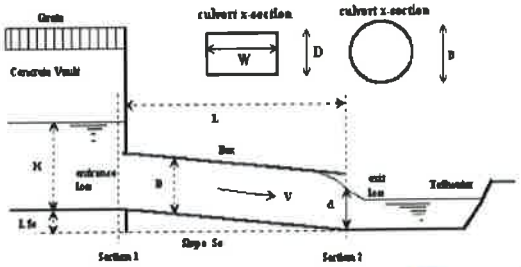
(Use P and CN with Table 2-1, Figure 2-1, or equations 2-3 and 2-4.)

Temporary Sediment Trap

	Okay	
1.09	Disturbed Area (Acres)	
2.65	Peak Flow from 2-year Storm (cfs)	
3924	Required Volume ft^3	
1154	Required Surface Area ft^2	
24.0	Suggested Width ft	
48.0	Suggested Length ft	
34	Trial Top Width at Spillway Invert ft	
40	Trial Top Length at Spillway Invert ft	
2	Trial Side Slope Ratio Z:1	
6	Trial Depth ft	(1.5 feet below grade + 2 to 3.5 feet above grade)
10	Bottom Width ft	
16	Bottom Length ft	
160	Bottom Area ft^2	
3984	Actual Volume ft^3	**Okay**
1360	Actual Surface Area ft^2	**Okay**
3	Trial Weir Length ft	
0.5	Trial Depth of Flow ft	
3.2	Spillway Capacity cfs	**Okay**

CULVERT STAGE-DISCHARGE SIZING (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: Blue cells are for the user to enter data into
Basin ID: Green cells are calculated values, filled from the VB macro code



Design Information (Input):

Circular Culvert:	Barrel Diameter in Inches	D =	12.00 inches
	Inlet Edge Type (choose from pull-down list)		Grooved End Projection
	OR:		OR:
Box Culvert:	Barrel Height (Rise) in Feet	Height (Rise) =	ft.
	Barrel Width (Span) in Feet	Width (Span) =	ft.
	Inlet Edge Type (choose from pull-down list)		1 : 1 Bevel w/ Headwall
	Number of Barrels	No =	1
	Inlet Elevation at Culvert Invert	Inlet Elev =	888.5 ft. elev.
	Outlet Elevation at Culvert Invert **OR** Slope of Culvert (ft v./ft h.)	Outlet Elev =	888.25 ft. elev.
	Culvert Length in Feet	L =	25.00 ft.
	Manning's Roughness	n =	0.0130
	Bend Loss Coefficient	K_b =	0.00
	Exit Loss Coefficient	K_x =	1.00

Design Information (calculated):

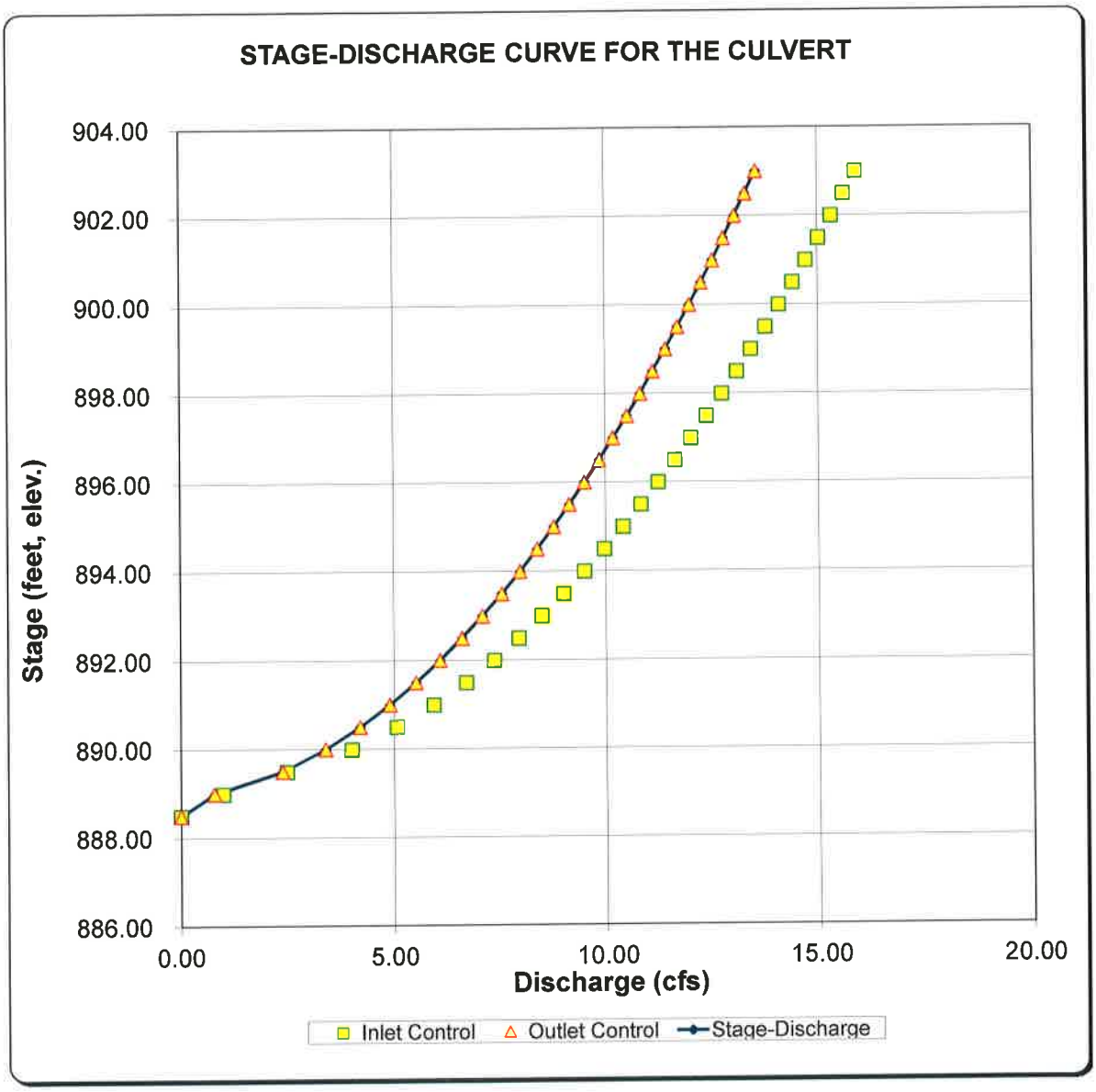
Entrance Loss Coefficient	K_e =	0.20
Friction Loss Coefficient	K_f =	0.78
Sum of All Loss Coefficients	K_s =	1.98
Orifice Inlet Condition Coefficient	C_d =	0.95
Minimum Energy Condition Coefficient	KE_{low} =	-0.6170

Calculations of Culvert Capacity (output):

Water Surface Elevation (ft., linked)	Tailwater Surface Elevation ft (input if known)	Culvert Inlet-Control Flowrate cfs (output)	Culvert Outlet-Control Flowrate cfs (output)	Controlling Culvert Flowrate cfs (output)	Inlet Equation Used: (output)
888.50	888.25	0.00	0.00	**0.00**	No flow (WS < inlet)
889.00	888.25	0.99	0.78	**0.78**	min. energy equation
889.50	888.25	2.49	2.38	**2.38**	regression equation
890.00	888.25	4.01	3.39	**3.39**	regression equation
890.50	888.25	5.07	4.20	**4.20**	regression equation
891.00	888.25	5.94	4.90	**4.90**	regression equation
891.50	888.25	6.71	5.52	**5.52**	orifice equation
892.00	888.25	7.37	6.09	**6.09**	orifice equation
892.50	888.25	7.95	6.61	**6.61**	orifice equation
893.00	888.25	8.50	7.09	**7.09**	orifice equation
893.50	888.25	9.02	7.55	**7.55**	orifice equation
894.00	888.25	9.50	7.98	**7.98**	orifice equation
894.50	888.25	9.97	8.39	**8.39**	orifice equation
895.00	888.25	10.41	8.78	**8.78**	orifice equation
895.50	888.25	10.83	9.15	**9.15**	orifice equation
896.00	888.25	11.24	9.51	**9.51**	orifice equation
896.50	888.25	11.64	9.85	**9.85**	orifice equation
897.00	888.25	12.02	10.18	**10.18**	orifice equation
897.50	888.25	12.39	10.51	**10.51**	orifice equation
898.00	888.25	12.75	10.82	**10.82**	orifice equation
898.50	888.25	13.10	11.12	**11.12**	orifice equation
899.00	888.25	13.43	11.42	**11.42**	orifice equation
899.50	888.25	13.77	11.71	**11.71**	orifice equation
900.00	888.25	14.09	11.99	**11.99**	orifice equation
900.50	888.25	14.41	12.27	**12.27**	orifice equation
901.00	888.25	14.72	12.54	**12.54**	orifice equation
901.50	888.25	15.02	12.80	**12.80**	orifice equation
902.00	888.25	15.32	13.06	**13.06**	orifice equation
902.50	888.25	15.61	13.31	**13.31**	orifice equation
903.00	888.25	15.89	13.56	**13.56**	orifice equation
				Processing Time:	0.72 seconds

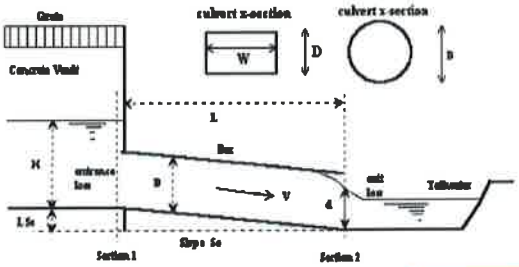
CULVERT STAGE-DISCHARGE SIZING (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: Blue cells are for the user to enter data into
Basin ID: Green cells are calculated values, filled from the VB macro code



CULVERT STAGE-DISCHARGE SIZING (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: Blue cells are for the user to enter data into
Basin ID: Green cells are calculated values, filled from the VB macro code



Design Information (Input):

Circular Culvert:	Barrel Diameter in Inches	D =	8.00	inches
	Inlet Edge Type (choose from pull-down list)		Grooved End Projection	
			OR:	
OR:				
Box Culvert:	Barrel Height (Rise) in Feet	Height (Rise) =		ft.
	Barrel Width (Span) in Feet	Width (Span) =		ft.
	Inlet Edge Type (choose from pull-down list)		1 : 1 Bevel w/ Headwall	
	Number of Barrels	No =	1	
	Inlet Elevation at Culvert Invert	Inlet Elev =	882	ft. elev.
	Outlet Elevation at Culvert Invert OR Slope of Culvert (ft v./ft h.)	Outlet Elev =	876	ft. elev.
	Culvert Length in Feet	L =	40.00	ft.
	Manning's Roughness	n =	0.0130	
	Bend Loss Coefficient	K_b =	0.00	
	Exit Loss Coefficient	K_x =	1.00	

Design Information (calculated):

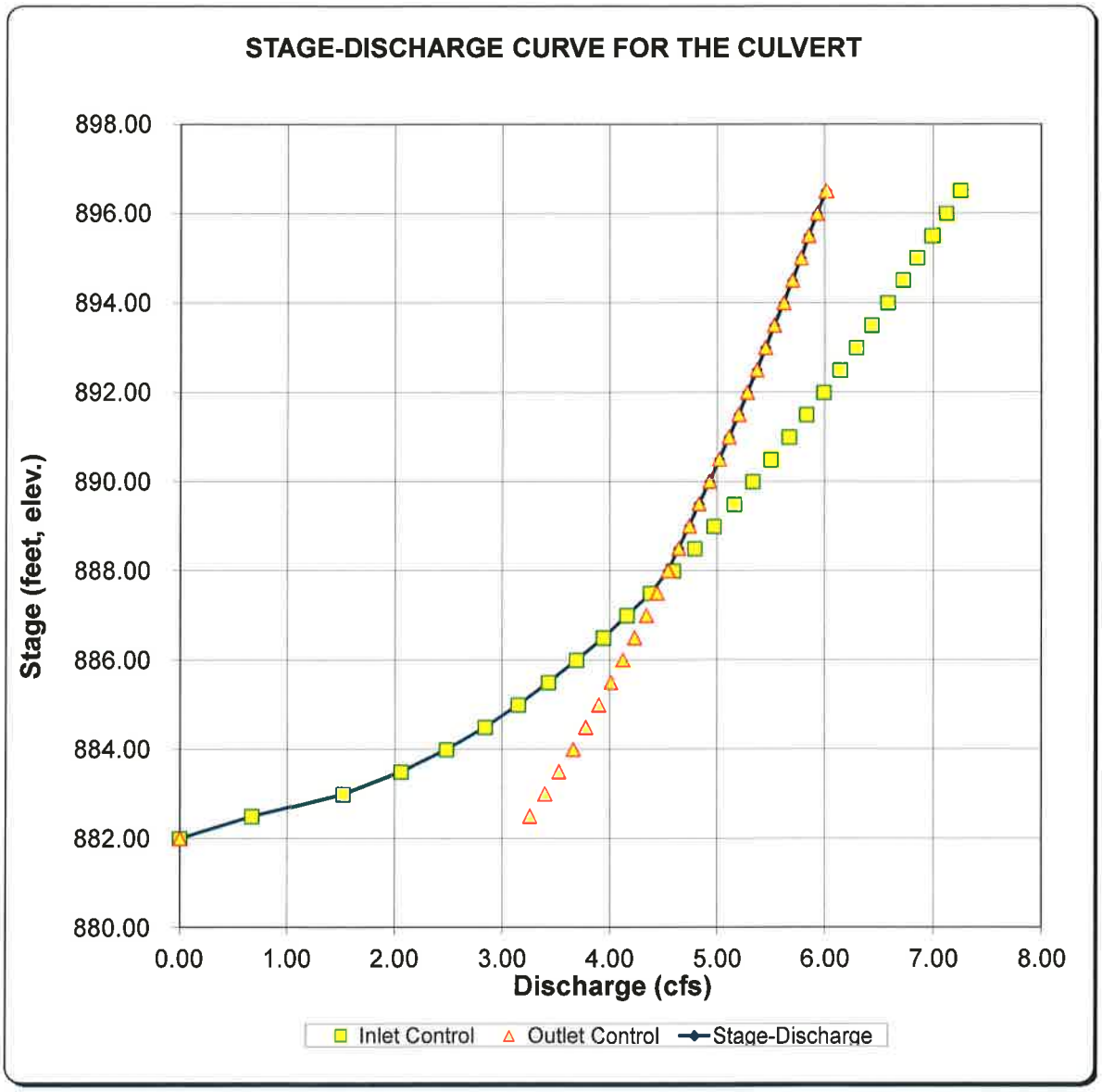
Entrance Loss Coefficient	K_e =	0.20
Friction Loss Coefficient	K_f =	2.14
Sum of All Loss Coefficients	K_s =	3.34
Orifice Inlet Condition Coefficient	C_d =	0.97
Minimum Energy Condition Coefficient	KE_{low} =	-1.1015

Calculations of Culvert Capacity (output):

Water Surface Elevation (ft., linked)	Tailwater Surface Elevation ft (Input if known)	Culvert Inlet-Control Flowrate cfs (output)	Culvert Outlet-Control Flowrate cfs (output)	Controlling Culvert Flowrate cfs (output)	Inlet Equation Used: (output)
882.00	876.00	0.00	0.00	**0.00**	No flow (WS < inlet)
882.50	876.00	0.67	3.26	**0.67**	regression equation
883.00	876.00	1.52	3.40	**1.52**	regression equation
883.50	876.00	2.06	3.53	**2.06**	regression equation
884.00	876.00	2.48	3.66	**2.48**	regression equation
884.50	876.00	2.84	3.78	**2.84**	orifice equation
885.00	876.00	3.15	3.90	**3.15**	orifice equation
885.50	876.00	3.43	4.01	**3.43**	orifice equation
886.00	876.00	3.69	4.12	**3.69**	orifice equation
886.50	876.00	3.94	4.23	**3.94**	orifice equation
887.00	876.00	4.16	4.34	**4.16**	orifice equation
887.50	876.00	4.38	4.44	**4.38**	orifice equation
888.00	876.00	4.59	4.54	**4.54**	orifice equation
888.50	876.00	4.79	4.64	**4.64**	orifice equation
889.00	876.00	4.97	4.74	**4.74**	orifice equation
889.50	876.00	5.16	4.83	**4.83**	orifice equation
890.00	876.00	5.33	4.93	**4.93**	orifice equation
890.50	876.00	5.50	5.02	**5.02**	orifice equation
891.00	876.00	5.67	5.11	**5.11**	orifice equation
891.50	876.00	5.83	5.20	**5.20**	orifice equation
892.00	876.00	5.99	5.28	**5.28**	orifice equation
892.50	876.00	6.14	5.37	**5.37**	orifice equation
893.00	876.00	6.29	5.45	**5.45**	orifice equation
893.50	876.00	6.43	5.53	**5.53**	orifice equation
894.00	876.00	6.58	5.62	**5.62**	orifice equation
894.50	876.00	6.72	5.70	**5.70**	orifice equation
895.00	876.00	6.85	5.78	**5.78**	orifice equation
895.50	876.00	6.99	5.85	**5.85**	orifice equation
896.00	876.00	7.12	5.93	**5.93**	orifice equation
896.50	876.00	7.25	6.01	**6.01**	orifice equation
				Processing Time:	0.41 seconds

CULVERT STAGE-DISCHARGE SIZING (INLET vs. OUTLET CONTROL WITH TAILWATER EFFECTS)

Project: Blue cells are for the user to enter data into
Basin ID: Green cells are calculated values, filled from the VB macro code



CONSTRUCTION SCHEDULE

1. Install stabilized construction entrance.
2. Install silt fence.
3. Install sediment traps or sediment basins
4. Begin clearing and grading.
5. Install proposed culverts.
6. Begin temporary seeding and mulching.
7. Final grading.
8. Final seeding and mulching.

SECTION 01 35 43

ENVIRONMENTAL PROCEDURES

PART 1 - GENERAL

1.01 SCOPE

A. The work covered by this section consists of furnishing all labor, materials and equipment, and performing all work required for the prevention of environmental pollution and the handling, removal, transportation and disposal of any hazardous and/or regulated solid waste generated during and as the result of construction operations under this contract except for those measures set forth in other provisions of these specifications. For the purpose of this specification, environmental pollution is defined as the presence of chemical, physical, or biological elements or agents, which adversely affect human health or welfare; unfavorably alter ecological balances of importance to man; or degrade the utility of the environment for esthetic and recreational purposes. The control of environmental pollution requires consideration of air, water, and land, and in solid waste-management, management of radiant energy and radioactive materials, as well as other pollutants including hazardous wastes, materials, substances and chemicals.

1.02 RELATED DOCUMENTS

A. Section 31 11 00: Clearing and Grubbing ❑

B. Section 31 23 36: Grading, Excavation and Backfill ❑

1.03 APPLICABLE REGULATIONS

A. In order to prevent, and to provide for abatement and control of any environmental pollution arising from construction activities in the performance of this contract, the Contractor and his subcontractors shall comply with all applicable Federal, State, and Local laws concerning environmental pollution control and abatement and any regulations referred to in the following paragraphs.

1. Tennessee Code Annotated, § 11-13-116 "Water Pollution Control."

2. Tennessee General Permit No. TNR100000, "Storm Water Discharges from Construction Activities."

B. For hazardous wastes, materials, substances and chemicals applicable regulations shall include, but are not limited to:

1. Tennessee Department of Environment and Conservation, Division of Solid Waste, TDEC Rule 1200-1-11 "Hazardous Waste Management Regulations."

2. Tennessee Code Annotated, § 68-212 "Hazardous Waste Management"

3. Code of Federal Regulations:

a. 29 CFR 1910.106 - "Flammable and Combustible Liquids."

b. 29 CFR 1910.120 - "Hazardous Waste Operations and Emergency Response."

c. 29 CFR 1910.1200 - "Hazardous Communications."

d. 40 CFR 260-268 - "Hazardous Waste Management System: General."

e. 40 CFR 279 - "Standards for the Management of Used Oil."

f. 40 CFR 355 - "Emergency Planning and Notification."

g. 40 CFR 372 - "Toxic Chemical Release Reporting: Community Right-To-Know."

h. 49 CFR 171-178 - "Transportation of Hazardous Materials."

1.04 MEASUREMENT AND PAYMENT

A. Environment Protection - Payment for the work covered under this section shall be included within the applicable bid items.

B. Hazardous/Regulated Waste -

1. If the Contractor generates hazardous and/or regulated solid wastes through his/her actions, no separate measurement or payment will be made for handling, removal, transportation and disposal of hazardous and/or regulated solid wastes. Payment for the work associated with and the disposal of hazardous/regulated solid wastes generated by the Contractor shall be distributed throughout the existing bid items.

2. If the Contractor uncovers an existing hazardous/regulated waste not Contractor generated, not shown on the drawings, and not specified herein, the Contractor shall notify the Engineer immediately. Payment for the handling, removal, transportation and disposal of hazardous and/or regulated solid wastes not Contractor generated, not shown on the drawings, and not specified herein will be made as an equitable adjustment in the contract.

1.05 QUALITY CONTROL

A. General

The Contractor shall establish and maintain quality control for environment protection to assure compliance with contract specifications and maintain records of his quality control for all construction operations including but not limited to the following:

1. Submit Plan of Environment Pollution Control. For Contractor work activities (such as painting, metal finishing, etc.) that will involve bringing hazardous chemicals, hazardous substances or hazardous materials onto the project site, include in the Plan a Hazard Communication Program and Safe Storage Plan. For Contractor activities that anticipate generation of hazardous wastes at the project site, include in the Plan a waste identification/determination and waste disposal plan. For Contractor on-site activities that pose a risk of an oil or

hazardous substance spill, include in the Plan a Spill Reporting and Response Plan.

2. Procure applicable Federal, State and Local regulations on pollution control.

3. Air Pollution - Checks made on dust, smoke, and noise.

4. Water Pollution - Checks made on disposal of water, oil, etc.

5. Land Pollution - Checks made on disposal of debris, restoration of temporary construction sites, etc.

6. Training Course for Employees.

B. Reporting

1. The original and two copies of these records, as well as the records of corrective action taken, shall be furnished to the Engineer.

1.06 NOTIFICATION

A. The Engineer will notify the Contractor in writing of any non-compliance with the foregoing provisions and the action to be taken. The Contractor shall, after receipt of such notice, immediately take corrective action. Such notice, when delivered to the Contractor or his authorized representative at the site of the work, shall be deemed sufficient for the purpose. If the Contractor fails or refuses to comply promptly, the Engineer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. No part of the time lost due to any such stop orders shall be made the subject of a claim for extension of time or for excess cost of damages by the Contractor.

1.07 SUBCONTRACTORS

A. Compliance with the provisions of this section by subcontractors will be the responsibility of the Contractor.

1.08 IMPLEMENTATION

A. Within 10 days after receipt of a Notice to Proceed, or otherwise directed below, the Contractor shall:

1. Submit a written proposal for implementing environmental pollution control at the project site, disposal of debris, non-hazardous wastes and hazardous wastes generated at the project site as well as storage and management of regulated materials, substances and chemicals brought onto and used at the project site.

2. Meet with representatives of the Engineer to develop mutual understanding relative to compliance with this provision and administration of the environmental pollution control program.

3. If applicable, submit a plan for the handling, removal, transportation and disposal of hazardous and/or regulated solid wastes generated because of the Contractor's operation.

B. Environmental Assessment of Contract Deviations

1. The Contractor is advised that deviations from the drawings or specifications (e.g., proposed alternate borrow areas, disposal areas, staging areas, alternate access routes, etc.) could result in the requirement for the Engineer to reanalyze the project from an environmental standpoint. Deviations from the construction methods and procedures indicated by the plans and specifications, which may have an environmental impact will require an extended review, processing, and approval time. The Engineer reserves the right to disapprove alternate methods, even if they are more cost effective, if the Engineer determines that the proposed alternate method will have an adverse environmental impact.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.01 PROTECTION OF LAND RESOURCES

A. General

1. The land resources within the project boundaries and outside the limits of permanent work performed under this contract shall be preserved in their present condition or be restored to a condition after completion of construction that will appear to be natural and not detract from the appearance of the project. The Contraction shall confine construction activities to areas defined by the plans or specifications, including borrow areas to be cleared.

B. Prevention of Landscape Defacement

1. Except in areas to be cleared and provided in Section 3.01C below, the Contractor shall not deface, injure, or destroy trees or shrubs, nor remove or cut them without the approval of the Engineer. Felling of trees shall be performed in such a manner as to avoid damage to trees to be left standing. Where trees may possibly be defaced, bruised, injured, or otherwise damaged by the Contractor's operations or equipment; he shall protect adequately such trees. Earth that is displaced into uncleared areas shall be removed. All monuments and markers shall be protected before beginning operations near them. Any trees or other landscape feature scarred or damaged by the Contractor's equipment or operations shall be restored as nearly as possible to its original condition at the Contractor's expense. Trees that are scarred shall be immediately painted with an acceptable tree wound paint. Any trees that are damaged beyond restoration shall be removed and disposed of as directed in Section 3.05.

C. Temporary Excavation and Embankments

1. If the Contractor proposes to construct temporary roads or embankments and excavation for plant and/or work areas, he shall obtain approval of the Engineer prior to start of such temporary work.

D. Post-Construction Cleanup or Obliteration

1. The Contractor shall obliterate all signs of temporary construction facilities such as work areas, structures, foundations of temporary structures, and stockpiles of

excess or waste materials upon completion of construction. The Contractor will be required to restore the construction area to near natural conditions that will permit the growth of vegetation.

E. Recording and Preserving Historical and Archeological Finds

1. All items having any apparent historical or archeological interest that are discovered in the course of any construction activities shall be carefully preserved. The Contractor shall leave the archeological find undisturbed and shall immediately report the find to the Engineer so that the proper authorities may be notified.

3.02 PROTECTION OF WATER RESOURCES

A. Contamination of Water

1. The Contractor shall not pollute lakes, ditches, rivers, canals, groundwater, waterways, or reservoirs with fuels, oils, bitumens, calcium chloride, insecticides, herbicides, or other similar materials harmful to fish, shellfish, or wildlife, or materials which may be a detriment to outdoor recreation.

B. Disposal of Materials

1. The methods and locations of disposal of materials, wastes, effluents, trash, garbage, oil, grease, chemicals, etc., within the right-of-way limits shall be such that harmful debris will not enter lakes, ditches, rivers, canals, groundwater, waterways, or reservoirs by erosion, and thus prevent the use of the area for recreation or present a hazard to wildlife.

C. Erosion Control

1. Surface drainage from cuts and fills within the construction limits, whether or not completed, and from borrow and waste disposal areas, shall, if turbidity producing materials are present, be held in suitable sedimentation ponds or shall be graded to control erosion within acceptable limits. Temporary erosion and sediment control measures shall be provided and maintained until permanent drainage and erosion control facilities are completed and operative. The area of bare soil exposed at any one time by construction operations shall not exceed that necessary to perform the work. Stream crossings by fording with equipment shall be limited to control turbidity and in areas of frequent crossings temporary culverts or bridges shall be installed. Any temporary culverts or bridges shall be removed upon completion of the project. Fills and waste area shall be constructed by selective placement to eliminate silts or clays on the surface that will erode and contaminate adjacent streams.

3.03 PROTECTION OF FISH AND WILDLIFE

A. The Contractor shall at all times perform all work and take such steps required to prevent any interference or disturbance to fish and wildlife. The Contractor will not be permitted to alter water flows or otherwise disturb native habitat adjacent to the project area that are critical to fish or wildlife. Any time a colony of nesting birds is discovered in the course of any construction activities, the colony should not be disturbed (i.e., no work within 1,500 feet), and the Contractor shall immediately report the findings to the

Engineer so that the U. S. Fish and Wildlife Service or the Tennessee Wildlife Resources Agency may be notified.

3.04 JANITOR SERVICES

A. The Contractor shall furnish daily janitorial services for all the offices, shops, laboratories, or other buildings being used by the Contractor whether existing or Contractor furnished, and perform any required maintenance of the facilities and grounds during the life of the contract. Toilet facilities shall be kept clean and sanitary at all times. Services shall be performed at such a time and in such a manner to least interfere with the operations but will be accomplished only when the buildings are in daily use. Services shall be accomplished to the satisfaction of the Engineer. The Contractor shall also provide weekly trash collection and cleanup of the buildings and adjacent outside areas, snow removal as required, and shall dispose of all discarded debris, aggregate samples and concrete test samples in a manner approved by the Engineer.

3.05 DISPOSAL OF NON-REGULATED DEBRIS

A. All debris resulting from construction operations on this contract shall be disposed of in accordance with Section 31 11 00 "Clearing and Grubbing."

3.06 DISPOSAL OF HAZARDOUS AND/OR REGULATED SOIL WASTES

A. If any hazardous or regulated solid wastes will be generated as a result of the Contractor's operations, the Contractor shall submit a plan that details the proper handling, removal, transportation and disposal of such wastes. The plan shall identify what types of hazardous and/or regulated solid wastes will be generated and shall list the hazards involved with each waste. All waste generated on-site by the Contractor must be properly identified within 30 days of generation. No regulated wastes shall be allowed to accumulate on-site for more than 90 days. The plan shall include Material Safety Data Sheets (MSDS), if applicable, for all wastes expected to be generated. The plan shall include, but not be limited to the following:

1. Hazardous waste shall be placed in closed containers and shall be shielded adequately to prevent dispersion of the waste by wind or water. Any evidence of improper storage shall be cause for immediate shutdown of the project until corrective action is taken.

2. Non-hazardous waste shall be stored in containers separate from hazardous waste storage areas.

3. All hazardous waste shall be transported by a licensed transporter in accordance with Tennessee Code Annotated, § 68-212, and TDEC Rule 1200-1-11.

4. All non-hazardous waste shall be transported in accordance with Local regulations regarding waste transportation.

5. In addition to the number of manifest copies required by TDEC, one copy of each manifest will be supplied to the Engineer prior to transportation.

6. The plan shall identify what types of hazardous and/or regulated solid wastes will be generated and shall list the hazards involved with each waste.

B. Hazardous Waste

1. For the handling, removal, transportation and disposal of any generated hazardous waste, the plan shall conform to the requirements of 29 CFR 1910.120. All employees of the Contractor or subcontractors that will be directly involved in the handling and/or removal of hazardous wastes shall be trained in accordance with 29 CFR 1910.1200. In addition, the employees shall have undergone a medical evaluation in accordance with 29 CFR 1910.1200. The Contractor shall include copies of employees' certifications and medical examinations as part of the plan specified herein. The plan shall also address the proper Personnel Protective Equipment (PPE) that the employees will be required to wear during the handling and removal of hazardous wastes. The Contractor shall obtain an EPA ID# and Hazardous Waste Disposal Manifests and shall sign the manifests as the generator. Wastes shall be transported via State and Federal approved hazardous waste transporter and disposed of at a State and Federal approved temporary, storage and disposal (TSD) facility. Copies of licenses and certifications of the transporter and TSD shall be included in the plan. The plan shall list the name and address of each transporter and TSD to be utilized. The Contractor shall be responsible for any sampling and analysis required by the TSD for characterization purposes. The Contractor shall submit to the Engineer completed copies of all Hazardous Waste Disposal Manifests within five (5) days after ultimate disposal at the TSD. Other regulations applicable to the handling, removal, transportation and disposal of hazardous wastes are: 40 CFR 261 "Identification and Listing of Hazardous Wastes"; 40 CFR 262 "Standard Applicable to Generators of Hazardous Wastes"; 40 CFR 268 "Land Disposal Restrictions".

C. Regulated Solid Wastes

1. For the handling, removal, transportation and disposal of any generated regulated solid wastes, the plan shall conform to the requirements of the TDEC Rule 1200-1-11. Solid wastes shall be transported to a Federal and State approved TSD, oil recycler or Industrial Type Landfill. The Contractor shall identify in the plan how he/she intends to dispose of each solid waste. The plan shall include the name, address, licenses and certifications of each disposal facility that will be used. If disposal manifests are required, the Contractor shall sign them as the generator. The Contractor shall be responsible for sampling and analyses that may be required by the disposal facility(ies) for characterization purposes. Licenses and certifications of the transporter and disposal facilities shall be included in the plan. The Contractor shall submit to the Engineer a completed copy of any waste disposal manifests within five (5) days after ultimate disposal.

D. Laboratory Accreditation.

1. All laboratory testing for waste determination shall be performed by a laboratory which is approved by the Tennessee Department of Environment and Conservation. The name and address of the laboratory shall be included in the Waste Classification, Handling, and Disposal Plan.

3.07 MAINTENANCE OF POLLUTION CONTROL FACILITIES

A. During the life of this contract, the Contractor shall maintain all facilities constructed for pollution control under this contract as long as the operations creating the particular pollutant are being carried out or until the material concerned has become stabilized to

the extent that pollution is no longer being created. Early in the construction period, the Contractor shall conduct a training course that will emphasize all phases of environmental protection.

3.08 REPORTING OF POLLUTION SPILLS

A. In the event that an oil spill or chemical release occurs during the performance of this contract, the Contractor is required to contact the **National Response Center, telephone number 1-800-424-8802** as soon as possible. The Contractor shall comply with any instructions from the responding agency concerning containment and/or cleanup of the spill.

***** END OF SECTION *****

SECTION 01 41 26.13

STORM WATER POLLUTION PREVENTION PLAN

PART 1 - GENERAL

1.01 SCOPE

A. The work specified in this section consists of the Contractor implementing, and diligently pursuing all measures required in the **Storm Water Pollution Prevention Plan (SWPPP)**. The SWPPP consists of this Section, 01 41 26.13, and any and all attachments including existing and future signed certification statements. The purpose of the SWPPP is to control soil erosion and the resulting sediment to the extent necessary to prevent sediment from leaving the contract rights-of-way and prevent pollution of any water body caused by the runoff from the areas of construction activities under this contract, under the terms of Tennessee General Permit No. TNR100000, Storm Water Discharges From Construction Activities (PERMIT), and as specified herein and shown on the drawings. The requirements of these specifications are supplemental to and shall become part of the overall Environmental Protection Plan required by Section 01 35 43 - "Environmental Procedures." The Contractor shall review the SWPPP to determine requirements for compliance. In addition, the Contractor shall ascertain that his subcontractors have reviewed the Plan, and that they comply with its provisions. The Contractor shall ensure that all subcontractors sign the Certification Statement.

1.02 RELATED DOCUMENTS

A. Section 01 35 43: Environmental Procedures ☑

B. Section 31 35 13: Slope Protection and Erosion Control ☑

B. Section 32 92 19.21: Seeding, Fertilizer and Mulch ☑

1.03 REFERENCES

A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by basic designation only.

1. ASTM D-4491 - Water Permeability of Geotextiles by Permittivity.
2. ASTM D-4533 - Trapezoid Tearing Strength of Geotextiles.
3. ASTM D-4632 - Grab Breaking Load and Elongation of Geotextiles.
4. ASTM D-4751 - Determining Apparent Opening Size of Geotextile.
5. ASTM D-4873 - Identification, Storage, and Handling of Geosynthetic Rolls.
6. Storm Water General Permit for Construction Activities - Tennessee General Permit No. TNR 10-0000.

1.04 MEASUREMENT AND PAYMENT

A. Storm Water Pollution Prevention Plan (SWPPP)

1. No separate measurement or payment will be made for work required by this section.

B. Silt Fence

1. Measurement for silt fences satisfactorily placed will be made by the linear foot. Payment for silt fences as specified herein will be made at the contract unit price per linear foot for "Erosion Control." Price and payment shall constitute full compensation for furnishing all plant, labor, materials and equipment, including geotextile fabric, and performing all operations necessary for the placement and maintenance of silt fences throughout the contract period, including final dressing and cleanup.

C. Straw Bale Barrier

1. Measurement for payment satisfactorily placed will be made by the bale. Price and payment shall constitute full compensation for furnishing straw, stakes, labor, material and equipment, and performing all operations necessary for placement and maintenance of straw bale barriers throughout the contract period.

1.05 DEFINITIONS

A. *Owner* - The Owner is the party that has operational control over plans and specifications including the ability to make changes to those items.

B. *Notice of Intent (NOI)* - A document that is completed and submitted to the Tennessee Department of Environment and Conservation (**TDEC**) as application for coverage to discharge under the PERMIT.

C. *Notice of Termination (NOT)* - A document that is completed and submitted to the TDEC to terminate permission to discharge under the PERMIT.

1.06 IMPLEMENTATION OF SWPPP

A. The Contractor shall implement the Storm Water Pollution Prevention Plan (SWPPP) specified in this section in a manner which will meet the requirements of Section 01 35 43, "Environmental Procedure", and the requirements of the PERMIT.

1. Notice of Intent (NOI)

a. Upon preparation of a complete SWPPP, the NOI will be submitted by the Owner as application for the Contractor's coverage under the terms of the PERMIT. If a specific permit applicable to this construction item has been received from TDEC in response to the NOI, a copy of the specific permit, as well as a copy of the Owner's NOI, will be provided to the Contractor at the Pre-construction Conference. The Contractor shall make any necessary modification to this SWPPP; attach the Contractor's Certification Statement provided at the end of this section to the SWPPP; and certify by signing the statement as the Contractor. The Contractor shall then submit an NOI as application for his/her coverage under the terms of the PERMIT prior to initiating any construction activities. Certified mail is recommended for Contractor's proof of submittal. A

copy of the Contractor's NOI submittal shall be provided to the Engineer at the time of submittal. TDEC will provide a specific permit to the Contractor in response to that NOI submittal. The NOI's of both the Contractor and the Owner, as well as the specific permits in response to the NOI, shall be posted at the job site by the Contractor.

1.07 SUBMITTALS

A. Certificates

1. The Contractor shall submit the Manufacturer's certification of compliance for the geotextile used on the silt fence. All brands of geotextile that are used in construction shall be accepted on the following basis:

   a. At least **30 days** prior to installation, the Contractor shall furnish to the Engineer, in duplicate, a mill certificate or affidavit signed by a legally authorized official from the company manufacturing the geotextile.

   b. The certificate shall contain the signer's title, the name and address of the Contractor, the contract number, and the project name and location.

   c. The mill certificate or affidavit shall attest that the geotextile meets the chemical, physical, and manufacturing requirements stated in this specification.

   d. Geotextiles shall not be delivered to the site until the geotextile certificates are approved by the Engineer.

B. Samples

1. A 4-foot by 12-foot sample of each geotextile that the Contractor plans to use shall accompany the certificate. If seams are to be used, then an additional 4-foot by 12-foot sample of each geotextile containing a sample seam in the center of the geotextile sample shall be submitted with the certificate. Geotextile shall not be delivered to the site until the geotextile samples are approved by the Engineer.

1.08 RECORD RETENTION REQUIREMENTS

A. Records of the NOI as well as any data used to complete it, the SWPPP, and any reports required by the PERMIT shall be retained by the permittee for at least **three years** from the date that the site is finally stabilized. Certification of the SWPPP by the Contractor or any sub-contractor is required in accordance with the PERMIT. Copies of required certifications are attached at the end of this section.

B. A copy of the SWPPP required by the PERMIT, including a copy of the permit language, shall be retained at the construction site (or other local location accessible to TDEC and the public) from the date of construction initiation to the date of stabilization. The permittee with day-to-day operational control over SWPPP implementation shall have a copy of the Plan available at a central location on-site for the use of all operators and those identified as having responsibilities under the Plan whenever they are on the construction site. A notice shall be posted near the main entrance to the construction site with the following information: (1) the PERMIT number for the project or a copy of the NOI if a permit has not yet been assigned; (2) the name and telephone number of a local contact person; (3) a brief description of the project; and (4) the location of the SWPPP if the site is inactive or does not have an on-site location to store the Plan.

C. Inspectors performing the required twice weekly inspections must have an active certification by completing the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. A copy of the certification or training record for inspector certification should be kept on site.

D. The dates of the following activities shall be recorded:

1. Major grading activities occurred.

2. Construction activities temporarily or permanently ceased.

3. Stabilization measures were initiated.

E. Any written correspondence concerning the NOI, NOT, SWPPP, or discharges from any facility covered under the PERMIT, shall be identified by permit number, if one has been assigned. The following is the TDEC mailing address:

Tennessee Department of Environment and Conservation
Division of Water Resources
1221 South Willow Avenue
Cookeville, Tennessee 38506

1.09 MAINTENANCE AND SURVEILLANCE FEES

A. The Contractor shall, without additional expense to the Owner, be responsible for paying any State required annual maintenance and surveillance fee for work associated with coverage under the PERMIT.

1.10 EROSION AND SEDIMENT CONTROLS

A. The controls and measures required for controlling sediment during construction are described below:

1. Stabilization Controls -

a. The stabilization practices to be implemented shall include fertilizing, seeding, and mulching as specified in Section 32 92 19.21. On a daily report, the Contractor shall record the dates when the major grading activities occur, (e.g., clearing and grubbing, excavation, embankment, and grading); when construction activities temporarily or permanently cease on a portion of the site; and when stabilization practices are initiated. Except as provided in (1) and (2) below, stabilization practices shall be initiated as soon as practicable, but no more than **7 days**, in any portion on the site where construction activities have temporarily or permanently ceased.

(1). Unsuitable Conditions - Where the initiation of stabilization measures by the **7th day** after construction activity temporarily or permanently ceases is precluded by unsuitable conditions caused by the weather, stabilization practices shall be initiated as soon as practicable after conditions become suitable.

(2). No Activity for Less Than 15 Days - Where construction activity will resume on a portion of the site within **15 days** from when activities ceased (e.g., the total time period that construction

activity is temporarily ceased is less than **15 days**), then stabilization practices do not have to be initiated on that portion of the site by the **7th day** after construction activity temporarily ceased. Stabilization practices shall be initiated on that portion of the site by the **7th** day in the case where construction activities will not resume within **15 days** after construction activities have ceased.

2. Structural Controls

a. Structural practices shall be implemented to divert flows from exposed soils, temporarily store flows, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Structural practices shall be implemented in a timely manner during the construction process to minimize erosion and sediment runoff. Location and details of installation and construction are shown on the drawings.

(1) Silt Fence Barrier - The Contractor shall provide silt fences as a temporary structural practice to minimize erosion and sediment runoff. Silt fences shall be properly installed, as shown on the contract drawings, to effectively retain sediment immediately after completing each phase of work where erosion would occur in the form of sheet and rill erosion (e.g., clearing and grubbing, excavation, embankment, and grading). Silt fences shall be installed in the locations indicated on the drawings. Final removal of silt fence barriers shall be upon approval by the Engineer.

PART 2 - PRODUCTS

2.01 COMPONENTS FOR SILT FENCE BARRIER

A. Filter Fabric

1. The geotextile shall comply with the requirements of the following table, and shall consist of polymeric filaments which are formed into a stable network such that filaments retain their relative positions. The filament shall consist of a long-chain synthetic polymer composed of at least 85 percent by weight of ester, propylene, or amide, and shall contain stabilizers and/or inhibitors added to the base plastic to make the filaments resistance to deterioration due to ultraviolet and heat exposure. Synthetic filter fabric shall contain ultraviolet ray inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 to 120 degrees F. The filter fabric shall meet the following requirements:

FILTER FABRIC FOR SILT SCREEN FENCE

PROPERTY	TEST PROCEDURE	VALUE
Grab Tensile Strength, lbs	ASTM D-4632	100 minimum
Grab Elongation at Ultimate, percent	ASTM D-4632	40 maximum
Puncture Strength, lbs	ASTM D-4833	30 minimum
AOS, U. S. Standard Sieve No.	ASTM D-4751	30
Water Flow Rate, gpm/sf	ASTM D-4491	25 minimum
Permitivity, per second	ASTM D-4491	.25 minimum
Percent Open Area, percent	Area of Openings/Total Area	4-8

B. Silt Fence Wooden Posts and Steel T-Posts

1. The Contractor may use either rounded wooden posts or steel T-posts for silt fence construction. Wooden posts utilized for silt fence construction, shall conform to the contract drawings and shall be either oak or pine wood. Steel T-posts utilized for silt fence construction, shall have a minimum weight of 0.75 pounds per linear foot and a minimum length of 7 feet.

PART 3 - EXECUTION

3.01 INSTALLATION OF SILT FENCE BARRIER

A. The silt fence shall be located and installed as indicated on the contract drawings. Filter fabric shall be from a continuous roll cut to the length of the barrier to avoid the use of joints. When joints are unavoidable, filter fabric shall be spliced together at a support post, with a minimum 6 inch overlap, and securely sealed. A trench shall be excavated approximately 4 inches wide and 6 inches deep on the upslope side of the location of the silt fence. The 4-inch by 6-inch trench shall be backfilled and the soil compacted over the filter fabric. The geotextile shall be attached to the land side of the post with wire or other method recommended by the manufacturer and such that an eight inch length of geotextile is left unattached at the bottom of the post, the unattached geotextile embedded in the trench and the trench backfilled. It is the responsibility of the Contractor to maintain the integrity of the silt fence. Any deficiencies shall be immediately corrected by the Contractor. The silt fence shall be promptly repaired or replaced should it become damaged or otherwise ineffective. The silt fence is to remain in place upon completion of the project, or as directed by the Engineer. Its maintenance shall be continual for that period of time for which excavated materials are placed in the area of the silt fence.

3.02 IDENTIFICATION, STORAGE AND HANDLING

A. Filter fabric shall be identified, stored and handled in accordance with ASTM D-4873.

3.03 MAINTENANCE

A. The Contractor shall maintain the temporary and permanent vegetation, erosion and sediment control measures, and other protective measures in good and effective operating condition by performing routine inspections to determine condition and

effectiveness, by restoration of destroyed vegetative cover, and by repair of erosion and sediment control measures and other protective measures. The following procedures shall be followed to maintain the protective measures:

1. Silt Fence and Straw Bale Barrier Maintenance

   a. Silt fences shall be inspected in accordance with Section 3.04. Any required repairs shall be made promptly. Close attention shall be paid to the repair of damaged silt fence resulting from end runs and undercutting. Should the fabric on a silt fence decompose or become ineffective, and the barrier is still necessary, the fabric shall be replaced promptly. Sediment deposits shall be removed when deposits reach one-third of the height of the barrier. Sediments shall be utilized in the job or disposed of as construction debris. When a silt fence or straw bale is no longer required, it shall be removed. The immediate area and any sediment deposits shall be shaped to an acceptable grade. The areas disturbed by this shaping shall be seeded in accordance with specifications noted on Project plans.

3.04 INSPECTIONS

A. The Contractor shall inspect disturbed areas of the construction site, areas used for storage of materials that are exposed to precipitation that have not been finally stabilized, stabilization practices, structural practices, other controls, and areas where vehicles exit the site **twice weekly**, before anticipated storm events (or series of storm events such as intermittent showers over one or more days) expected to cause a significant amount of runoff, and within **24 hours** of the end of any storm that produces 0.5 inches or more rainfall at the site. Where sites have been finally stabilized, such inspection shall be conducted at least **once every month** if runoff unlikely due to weather (snow, frozen ground, etc.).

B. Inspections

1. Disturbed areas and areas used for material storage that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the drainage system. Erosion and sediment control measures identified in the SWPPP shall be observed to ensure that they are operating correctly. Discharge locations or points shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters. Locations where vehicles exit the site shall be inspected for evidence of offsite sediment tracking.

2. For each inspection conducted, the Contractor shall prepare a report summarizing the scope of the inspection, name(s) and qualifications of personnel making the inspection, the date(s) of the inspection, major observations relating to the implementation of the SWPPP, maintenance performed, and actions taken. The report shall be furnished to the **TDEC within 24 hours** of the inspection as a part of the Contractor's daily report. A copy of the inspection report shall be maintained on the job site. Sample inspection reports are included at the end of this section.

3.05 NOTICE OF TERMINATION

A. Upon stabilization and elimination of all storm water discharges authorized by the PERMIT, or where the operator of all storm water discharges at a facility changes, a Notice of Termination (NOT) shall be certified and submitted by the Contractor to the

TDEC. A copy of the NOT form is provided at the end of this section. Certified mail is recommended for proof of the NOT submittal. The NOT shall be submitted within 30 days of stabilization or assumption of full control of the SWPPP by another operator/permittee over all areas of the site that have not been finally stabilized.

***** END OF SECTION *****

POLLUTION PREVENTION PLAN CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under by direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: _____
(Owner)

Date: _____

CONTRACTOR'S CERTIFICATION

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated. I am aware that there are significant penalties, including the possibility of fine and imprisonment for knowing violations, and for failure to comply with these permit requirements.

Signature	For	Responsible for
_____ (Name & Title)	(Company & Address)	General Contractor
_____ (Name & Title)	(Company & Address)	General Contractor
_____ (Name & Title)	(Company & Address)	General Contractor

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

TO BE COMPLETED TWICE WEEKLY AND WITHIN 24 HOURS OF A RAINFALL EVENT OF 0.5 INCHES OR MORE

INSPECTOR: _____ DATE: _____

INSPECTOR'S QUALIFICATIONS:

_____

_____

_____

DAYS SINCE LAST RAINFALL: _____ AMOUNT OF LAST RAINFALL _____ INCHES

STABILIZATION MEASURES

AREA	DATE SINCE LAST DISTURBED	DATE OF NEXT DISTURBANCE	STABILIZED? (YES/NO)	STABILIZED WITH	CONDITION

STABILIZATION REQUIRED:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

STRUCTURAL CONTROLS

DATE: _____

EARTH DIKE:

FROM	TO	IS DIKE STABILIZED	IS THERE EVIDENCE OF WASHOUT OR OVER-TOPPING?

MAINTENANCE REQUIRED FOR EARTH DIKE:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

SEDIMENT BASIN:

DEPTH OF SEDIMENT IN BASIN	CONDITION OF BASIN SIDE SLOPES	ANY EVIDENCE OF OVERTOPPING OF THE EMBANKMENT?	CONDITION OF OUTFALL FROM SEDIMENT BASIN

MAINTENANCE REQUIRED FOR SEDIMENT BASIN:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

OTHER CONTROLS

STABILIZED CONSTRUCTION ENTRANCE:

DOES MUCH SEDIMENT GET TRACKED ON TO ROAD?	IS THE GRAVEL CLEAN OR IS IT FILLED WITH SEDIMENT?	DOES ALL TRAFFIC USE THE STABILIZED ENTRANCE TO LEAVE THE SITE?	IS THE CULVERT BENEATH THE ENTRANCE WORKING?

MAINTENANCE REQUIRED FOR STABILIZED CONSTRUCTION ENTRANCE:

_____

_____

_____

_____

TO BE PERFORMED BY: _____ ON OR BEFORE: _____

STORM WATER POLLUTION PREVENTION PLAN

INSPECTION AND MAINTENANCE REPORT FORM

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____

_____

_____

_____

REASONS FOR CHANGES:

_____

_____

_____

_____

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SIGNATURE: _____ DATE: _____

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)

Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharges from Construction Activities (TNR100000)

Site or Project Name:		**Existing NPDES Tracking Number: TNR**
Street Address or Location:		Start date:
		Estimated end date:
Site Activity Description:		Latitude (dd.dddd):
		Longitude (dd.dddd):
County(ies):	MS4 Jurisdiction:	Acres Disturbed:
		Total Acres:

Does a topographic map show dotted or solid blue lines ☐ and/or wetlands ☐ on or adjacent to the construction site?
If wetlands are located on-site and may be impacted, attach wetlands delineation report.
If an Aquatic Resource Alteration Permit has been obtained for this site, what is the permit number? ARAP permit No.:

Receiving waters:

Attach the SWPPP with the NOI ☐ SWPPP Attached	Attach a site location map ☐ Map Attached

Site Owner/Developer Entity (***Primary Permittee*** - person, company, or legal entity that has operational or design control over construction plans and specifications):

Site Owner/Developer Signatory (V.P. level/higher - individual responsible for site - signs certification below):		Signatory's Title or Position (V.P. level/higher - signs certification below):	
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	
Optional Contact:		Title or Position:	
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	

Owner or Developer Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Primary Permittee)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Owner or Developer Name: (print or type)	Signature:	Date:

Contractor(s) Certification (must be signed by president, vice-president or equivalent, or ranking elected official) (Secondary Permittee)

I certify under penalty of law that I have reviewed this document, any attachments, and the SWPPP referenced above. Based on my inquiry of the construction site owner/developer identified above and/or my inquiry of the person directly responsible for assembling this NOI and SWPPP, I believe the information submitted is accurate. I am aware that this NOI, if approved, makes the above-described construction activity subject to NPDES permit number TNR100000, and that certain of my activities on-site are thereby regulated.

Contractor company name (print or type):			
Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	
Other Contractor company name (print or type):			
Other Contractor signatory (print/type): (V.P. level or higher)		Signature:	Date:
Mailing Address:		City:	State: Zip:
Phone:	Fax:	E-mail:	

OFFICIAL STATE USE ONLY

Received Date:	Reviewer:	Field Office:	Permit Number TNR 171798	Exceptional TN Water:
Fee(s):	T & E Aquatic Flora and Fauna:		Impaired Receiving Stream:	Notice of Coverage Date:

(Continued on reverse)

Notice of Intent (NOI) for General NPDES Permit for Stormwater Discharges from Construction Activities (TNR100000)

Purpose of this form: A completed notice of intent (NOI) must be submitted to obtain coverage under the Tennessee General NPDES Permit for Discharges of Stormwater Associated with Construction Activity (permit). **Requesting coverage under this permit means that an applicant has obtained and examined a copy of this permit, and thereby acknowledges applicant's claim of ability to be in compliance with permit terms and conditions.** This permit is required for stormwater discharge(s) from construction activities including clearing, grading, filling and excavating (including borrow pits) of one or more acres of land. This form should be submitted at least 30 days prior to the commencement of land disturbing activities, or no later than 48 hours prior to when a new operator assumes operational control over site specifications or commences work at the site.

Permit application fee: (see table below) must accompany the NOI and is based on total acreage to be disturbed by an entire project, including any associated construction support activities (e.g. equipment staging yards, material storage areas, excavated material disposal areas, borrow or waste sites).

Acres Disturbed	= or > 150 acres	= or > 50 < 150 acres	= or > 20 < 50 acres	= or > 5 < 20 acres	= or > 1 < 5 acres	Subsequent coverage*
Fee	$10,000	$6,000	$3,000	$1,000	$250	$100

*Subsequent Primary Operators seeking coverage under an actively covered larger common plan of development or sale

Who must submit the NOI form: Per Section 2 of the permit, all site operators must submit an NOI form. "Operator" for the purpose of this permit and in the context of stormwater associated with construction activity means any person associated with a construction project who meets either or both of the following two criteria: (1) The person has operational or design control over construction plans and specifications, including the ability to make modifications to those plans and specifications. This person is typically the owner or developer of the project or a portion of the project (e.g. subsequent builder), or the person that is the current land owner of the construction site. This person is considered the primary permittee; or (2) The person has day-to-day operational control of those activities at a project which are necessary to ensure compliance with a SWPPP for the site or other permit conditions. This person is typically a contractor or a commercial builder who is hired by the primary permittee, and is considered a secondary permittee.

Owners, developers and all contractors that meet the definition of the operator in subsection 2.2 of the permit shall apply for permit coverage on the same NOI, insofar as possible. After permit coverage has been granted to the primary permittee, any subsequent NOI submittals must include the site's previously assigned permit tracking number and the project name. The comprehensive site-specific SWPPP shall be prepared in accordance with the requirements of part 3 of the permit and must be submitted with the NOI unless the NOI being submitted is to only add a contractor (secondary permittee) to an existing coverage.

Notice of Coverage: The division will review the NOI for completeness and accuracy and prepare a notice of coverage (NOC). Stormwater discharge from the construction site is authorized as of the effective date of the NOC.

Complete the form: Type or print clearly, using ink and not markers or pencil. Answer each item or enter "NA," for not applicable, if a particular item does not fit the circumstances or characteristics of your construction site or activity. If you need additional space, attach a separate piece of paper to the NOI form. **The NOI will be considered incomplete without a permit fee, a map, and the SWPPP.**

Describe and locate the project: Use the legal or official name of the construction site. If a construction site lacks street name or route number, give the most accurate geographic information available to describe the location (reference to adjacent highways, roads and structures; e.g. intersection of state highways 70 and 100). Latitude and longitude (expressed in decimal degrees) of the center of the site can be located on USGS quadrangle maps. The quadrangle maps can be obtained at the USGS World Wide Web site: http://www.usgs.gov/; latitude and longitude information can be found at numerous other web sites. Attach a copy of a portion of a 7.5 minute quad map, showing location of site, with boundaries at least one mile outside the site boundaries. Provide estimated starting date of clearing activities and completion date of the project, and an estimate of the number of acres of the site on which soil will be disturbed, including borrow areas, fill areas, stockpiles and the total acres. For linear projects, give location at each end of the construction area.

MS4 Jurisdiction: If this construction site is located within a Municipal Separate Storm Sewer System (MS4), please list name of MS4. A current list of MS4s in Tennessee may be found at http://www.state.tn.us/environment/water/water-quality_storm-water.shtml

Give name of the receiving waters: Trace the route of stormwater runoff from the construction site and determine the name of the river(s), stream(s), creek(s), wetland(s), lake(s) or any other water course(s) into which the stormwater runoff drains. Note that the receiving water course may or may not be located on the construction site. If the first water body receiving construction site runoff is unnamed ("unnamed tributary"), determine the name of the water body that the unnamed tributary enters.

ARAP permit may be required: **If your work will disturb or cause alterations of a stream or wetland, you must obtain an appropriate Aquatic Resource Alteration Permit (ARAP).** If you have a question about the ARAP program or permits, contact your local Environmental Field Office (EFO).

Submitting the form and obtaining more information: Note that this form must be signed by the company President, Vice-President, or a ranking elected official in the case of a municipality, for details see subpart 2.5. For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC). Submit the completed NOI form (keep a copy for your records) to the appropriate EFO for the county(ies) where the construction activity is located, addressed to **Attention: Stormwater NOI Processing**.

EFO	**Street Address**	**Zip Code**	**EFO**	**Street Address**	**Zip Code**
Memphis	8383 Wolf Lake Drive, Bartlett	38133-4119	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305-4316	Chattanooga	540 McCallie Avenue STE 550	37402-2013
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-TDEC (8332)

Notice of Termination (NOT) for General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

This form is required to be submitted when requesting termination of coverage from the CGP. The purpose of this form is to notify the TDEC that either all stormwater discharges associated with construction activity from the portion of the identified facility where you, as an operator, have ceased or have been eliminated; or you are no longer an operator at the construction site. Submission of this form shall in no way relieve the permittee of permit obligations required prior to submission of this form. Please submit this form to the local WPC Environmental Field Office (EFO) address (see table below). For more information, contact your local EFO at the toll-free number 1-888-891-8332 (TDEC).

Type or print clearly, using ink.

Site or Project Name:	**NPDES Tracking Number: TNR**
Street Address or Location:	County(ies):

Name of Permittee Requesting Termination of Coverage:			
Permittee Contact Name:	Title or Position:		
Mailing Address:	City:	State:	Zip:
Phone:	E-mail:		

Check the reason(s) for termination of permit coverage:

☐	Stormwater discharge associated with construction activity is no longer occurring and the permitted area has a uniform 70% permanent vegetative cover OR has equivalent measures such as rip rap or geotextiles, in areas not covered with impervious surfaces.
☐	You are no longer the operator at the construction site (i.e., termination of site-wide, primary or secondary permittee coverage).

Certification and Signature: (must be signed by president, vice-president or equivalent ranking elected official)

I certify under penalty of law that either: (a) all stormwater discharges associated with construction activity from the portion of the identified facility where I was an operator have ceased or have been eliminated or (b) I am no longer an operator at the construction site. I understand that by submitting this notice of termination, I am no longer authorized to discharge stormwater associated with construction activity under this general permit, and that discharging pollutants in stormwater associated with construction activity to waters of the United States is unlawful under the Clean Water Act where the discharge is not authorized by a NPDES permit. I also understand that the submittal of this notice of termination does not release an operator from liability for any violations of this permit or the Clean Water Act.

For the purposes of this certification, elimination of stormwater discharges associated with construction activity means that all stormwater discharges associated with construction activities from the identified site that are authorized by a NPDES general permit have been eliminated from the portion of the construction site where the operator had control. Specifically, this means that all disturbed soils at the portion of the construction site where the operator had control have been finally stabilized, the temporary erosion and sediment control measures have been removed, and/or subsequent operators have obtained permit coverage for the site or portions of the site where the operator had control.

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Permittee name (print or type):	Signature:	Date:

EFO	Street Address	Zip Code	EFO	Street Address	Zip Code
Memphis	8383 Wolf Lake Drive, Bartlett, TN	38133	Cookeville	1221 South Willow Ave.	38506
Jackson	1625 Hollywood Drive	38305	Chattanooga	540 McCallie Avenue STE 550	37402
Nashville	711 R S Gass Boulevard	37243	Knoxville	3711 Middlebrook Pike	37921
Columbia	1421 Hampshire Pike	38401	Johnson City	2305 Silverdale Road	37601

TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION (TDEC)
Division of Water Resources
William R. Snodgrass Tennessee Tower, 312 Rosa L. Parks Avenue, 11th Floor, Nashville, Tennessee 37243
1-888-891-8332 (TDEC)
General NPDES Permit for Stormwater Discharges from Construction Activities (CGP)

Construction Stormwater Inspection Certification (Twice-Weekly Inspections)

Site or Project Name: Heath Dodson Poultry House			**NPDES Tracking Number: TNR**	
Primary Permittee Name:			Date of Inspection:	
Current approximate disturbed acreage:		Has rainfall been checked/documented daily? ☐ Yes ☐ No	Name of Inspector:	
Current weather conditions:			Inspector's TNEPSC Certification Number:	

Please check the box if the following items are on-site:

☐ Notice of Coverage (NOC) ☐ Stormwater Pollution Prevention Plan (SWPPP) ☐ Twice-weekly inspection documentation
☐ Site contact information ☐ Rain Gage ☐ Off-site Reference Rain Gage Location: _____

Best Management Practices (BMPs):

Are the Erosion Prevention and Sediment Controls (EPSCs) functioning correctly: If "No," describe below in Comment Section			
1.	Are all applicable EPSCs installed and maintained per the SWPPP?	☐Yes	☐No
2.	Are EPSCs functioning correctly at all disturbed areas/material storage areas per section 4.1.5?	☐Yes	☐No
3.	Are EPSCs functioning correctly at outfall/discharge points such that there is no objectionable color contrast in the receiving stream, and no other water quality impacts per section 5.3.2?	☐Yes	☐No
4.	Are EPSCs functioning correctly at ingress/egress points such that there is no evidence of track out?	☐Yes	☐No
5.	If applicable, have discharges from dewatering activities been managed by appropriate controls per section 4.1.4? If "No," describe below the measures to be implemented to address deficiencies.	☐Yes	☐No
6.	If construction activity at any location on-site has temporarily/permanently ceased, was the area stabilized within 14 days per section 3.5.3.2? If "No," describe below each location and measures taken to stabilize the area(s).	☐Yes	☐No
7.	Have pollution prevention measures been installed, implemented, and maintained to minimize the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other wash waters per section 4.1.5? If "No," describe below the measures to be implemented to address deficiencies.	☐Yes	☐No
8.	If a concrete washout facility is located on site, is it clearly identified on the project and maintained? If "No," describe below the measures to be implemented to address deficiencies. ☐ N/A	☐Yes	☐No
9.	Have all previous deficiencies been addressed? If "No," describe the remaining deficiencies in the Comments section. ☐ Check if deficiencies/corrective measures have been reported on a previous form.	☐Yes	☐No

Comment Section. If the answer is "No" for any of the above, please describe the problem and corrective actions to be taken. Otherwise, describe any pertinent observations:

Certification and Signature (must be signed by the certified inspector and the permittee per Sections 3.5.8.2 (g) and 7.7.2 of the CGP)

I certify under penalty of law that this document and all attachments were prepared by me, or under my direction or supervision. The submitted information is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. As specified in Tennessee Code Annotated Section 39-16-702(a)(4), this declaration is made under penalty of perjury.

Inspector Name and Title:	Signature:	Date:
Primary Permittee Name and Title:	Signature:	Date:

Construction Stormwater Inspection Certification Form (Twice-Weekly Inspections)

Purpose of this form/ Instructions

An inspection, as described in section 3.5.8.2. of the General Permit for Stormwater Discharges from Construction Activities ("Permit"), shall be performed at least twice every calendar week and documented on this form. Inspections shall be performed at least 72 hours apart. Where sites or portion(s) of construction sites have been temporarily stabilized, or runoff is unlikely due to winter conditions (e.g., site covered with snow or ice), such inspection only has to be conducted once per month until thawing results in runoff or construction activity resumes.

Inspectors performing the required twice weekly inspections must have an active certification by completing the "Fundamentals of Erosion Prevention and Sediment Control Level I" course. (http://www.tnepsc.org/). A copy of the certification or training record for inspector certification should be kept on site.

Qualified personnel, as defined in section 3.5.8.1 of the Permit (provided by the permittee or cooperatively by multiple permittees) shall inspect disturbed areas of the construction site that have not been finally stabilized, areas used for storage of materials that are exposed to precipitation, structural control measures, locations where vehicles enter or exit the site, and each outfall.

Disturbed areas and areas used for storage of materials that are exposed to precipitation shall be inspected for evidence of, or the potential for, pollutants entering the site's drainage system. Erosion prevention and sediment control measures shall be observed to ensure that they are operating correctly.

Outfall points (where discharges leave the site and/or enter waters of the state) shall be inspected to determine whether erosion prevention and sediment control measures are effective in preventing significant impacts to receiving waters. Where discharge locations are inaccessible, nearby downstream locations shall be inspected. Locations where vehicles enter or exit the site shall be inspected for evidence of offsite sediment tracking.

Based on the results of the inspection, any inadequate control measures or control measures in disrepair shall be replaced or modified, or repaired as necessary, before the next rain event if possible, but in no case more than 7 days after the need is identified.

Based on the results of the inspection, the site description identified in the SWPPP in accordance with section 3.5.1 of the Permit and pollution prevention measures identified in the SWPPP in accordance with section 3.5.2 of the Permit, shall be revised as appropriate, but in no case later than 7 days following the inspection. Such modifications shall provide for timely implementation of any changes to the SWPPP, but in no case later than 14 days following the inspection.

All inspections shall be documented on this Construction Stormwater Inspection Certification form. Alternative inspection forms may be used as long as the form contents and the inspection certification language are, at a minimum, equivalent to the division's form and the permittee has obtained a written approval from the division to use the alternative form. Inspection documentation will be maintained on site and made available to the division upon request. Inspection reports must be submitted to the division within 10 days of the request.

Trained certified inspectors shall complete inspection documentation to the best of their ability. Falsifying inspection records or other documentation or failure to complete inspection documentation shall result in a violation of this permit and any other applicable acts or rules.

SECTION 31 35 13

SLOPE PROTECTION AND EROSION CONTROL

PART 1 – GENERAL

1.01 WORK INCLUDED

A. This section shall consist of temporary and/or permanent control measures as shown in the plans or directed by the Engineer during the life of the Contract to control erosion and water pollution, through the use of berms, dikes, dams, sediment basins, fiber mats, netting, mulches, grasses, slope drains, temporary silt fences, and other control devices.

B. The temporary pollution control provisions contained herein shall be coordinated with the permanent erosion control features, to assure economical, effective, and continuous erosion control throughout the construction and post-construction period.

C. This section shall be utilized by the contractor to prepare and submit to the Engineer a Stormwater Control Plan as required by Federal and State Regulations. The Contractor will be responsible for meeting all of the requirements for stormwater permitting if the project will consist of more than one (1) acres of disturbed area.

D. The Contractor shall perform all work in strict accordance with any Aquatic Resources Alteration Permits, Army Corps of Engineers 404 Permits, TVA 26A Permits, and any other Environmental Permits issued for the project.

1.02 RELATED DOCUMENTS

A. Section 31 11 00: Clearing and Grubbing. ❑

B. Section 31 23 36: Grading, Excavation, and Backfill. ❑

C. Section 32 92 19.21: Seeding, Fertilizer, and Mulch. ☑

1.03 REFERENCES

A. Tennessee Erosion & Sediment Control Handbook, Tennessee Department of Environment and Conservation, Latest Edition.

B. Tennessee Rule 1200-4-10.

PART 2 – PRODUCTS

2.01 TEMPORARY BERMS

A. A temporary berm is constructed of compacted soil, with or without a shallow ditch, at the top of fill slopes of transverse to centerline on fills.

B. These berms are used temporarily at the top of newly constructed slopes to prevent excessive erosion until permanent controls are installed or slopes stabilized.

2.02 TEMPORARY SLOPE DRAINS

A. A temporary slope drain is a facility consisting of coarse aggregate, riprap, rock channel protection, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, sod or other material acceptable to the Engineer that may be used to carry water down slopes to reduce erosion. Such material shall be approved by the Engineer before being incorporated into the work. Sediment pits may be included as part of slope drain construction.

2.03 SEDIMENT STRUCTURES

A. Sediment basins, ponds, and traps are prepared storage areas constructed to trap and store sediment from erodible areas in order to protect properties and stream channels below the construction areas from excessive siltation. Sand or filter fabric may be required.

2.04 CHECK DAMS

A. Check dams are barriers composed of logs and poles, large stones or other materials placed across a natural or constructed drainway.

B. Stone check dams shall not be utilized where the drainage area exceeds fifty (50) acres. Log and pole structures shall not be used where the drainage area exceeds five (5) acres.

2.05 TEMPORARY SEEDING AND MULCHING

A. Temporary seeding and mulching are measures consisting of seeding, mulching, fertilizing, and matting utilized to reduce erosion. All cut and fill slopes including waste sites and borrow pits shall be seeded when and where necessary to eliminate erosion.

2.06 BRUSH BARRIERS

A. Brush barriers shall consist of brush, tree trimmings, shrubs, plants, and other approved refuse from the clearing and grubbing operation.

B. Brush barriers are placed on natural ground at the bottom of fill slopes, where the most likely erodible areas are located to restrain sedimentation particles.

2.07 BALED HAY OR STRAW CHECKS

A. Baled hay or straw erosion checks are temporary measures to control erosion and prevent siltation. Bales shall be either hay or straw containing five (5) cubic feet or more of material.

B. Baled hay or straw checks shall be used where the existing ground slopes toward or away from the embankment along the toe of slopes, in ditches, or other areas where siltation erosion or water run-off is a problem.

2.08 TEMPORARY SILT FENCES

A. Silt fences are temporary measures utilizing woven wire or other approved material attached to posts with filter cloth composed of burlap, plastic filter fabric, etc., attached to the upstream side of the fence to retain the suspended silt particles in the run-off water.

2.09 SANDBAG COFFERDAMS

A. Cofferdams shall be constructed as detailed in plans whenever a stream crossing is required or work is necessary in a stream channel.

2.10 RIPRAP

A. Riprap is a permanent, erosion-resistant ground cover of large, loose, angular stone. This method is utilized to protect the soil surface from the erosive forces of concentrated runoff; to slow the velocity of concentrated runoff while enhancing the potential for infiltration; and to stabilize slopes with seepage problems and/or non-cohesive soils. Riprap, as appropriate, may be used at storm drain outlets, on channel banks and/or bottoms, roadside ditches, drop structures, at the toe of slopes, etc.

PART 3 – EXECUTION

3.01 PROJECT REVIEW

A. Prior to the Preconstruction Conference, the Contractor shall meet with the Engineer and go over in detail the expected problem areas in regard to the erosion control work. Different solutions should be discussed so that the best method might be determined. It is the basic responsibility of the Contractor to develop and submit an erosion control plan acceptable to the Engineer.

3.02 PRECONSTRUCTION CONFERENCE

A. At the Preconstruction Conference, the Contractor shall submit for acceptance a Stormwater Control Plan, which includes his schedule for accomplishment of temporary and permanent erosion control work, as are applicable for clearing and grubbing, grading, bridges and other structures at watercourses, construction, and paving. He shall also submit for acceptance his proposed method of erosion control on haul roads and borrow pits and his plan for disposal of waste materials. No work shall be started until the erosion control schedules and methods of operations have been accepted by the Engineer.

3.03 CONSTRUCTION REQUIREMENTS

A. The Engineer has the authority to limit the surface area of erodible earth material exposed by clearing and grubbing, the surface of erodible earth material exposed by excavation, borrow and fill operations and to direct the Contractor to provide immediate permanent or temporary pollution control measures to prevent contamination of adjacent streams or other watercourses, lakes, ponds, or other water impoundment. Such work may involve the construction of temporary berms, dikes, dams, sediment basins, slope drains, and use of temporary mulches, mats, seeding or other control devices or methods as necessary to control erosion. Cut and fill slopes shall be seeded and mulched as the excavation proceeds to the extent directed by the Engineer.

B. The Contractor shall be required to incorporate all permanent erosion control features into the project at the earliest practicable time as outlined in his accepted schedule. Temporary pollution control measures shall be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with permanent control features on the project.

C. Where erosion is likely to be a problem, clearing and grubbing operations should be so scheduled and performed that grading operations and permanent erosion control features can follow immediately thereafter if the project conditions permit; otherwise erosion control measures may be required between successive construction stages. Under no conditions shall the surface area of erodible earth material exposed at one time by clearing and grubbing, exceed 750,000 square feet without prior approval by the Engineer.

D. The Engineer will limit the area of excavation, borrow, and embankment operations in progress commensurate with the Contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent pollution control measures current in accordance with the accepted schedule. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures shall be taken immediately to the extent feasible and justified.

E. In the event of conflict between these requirements and pollution control laws, rules, or regulations or other Federal or State or local agencies, the more restrictive laws, rules, or regulations shall apply.

F. The Contractor shall utilize Best Management Practices (BMP's) to provide the least environmental disturbance.

3.04 CONSTRUCTION OF STRUCTURES

A. Temporary Berms

1. A temporary berm shall be constructed of compacted soil, with a minimum width of 24 inches at the top and a minimum height of twelve (12") inches with or without a shallow ditch, constructed at the top of fill slopes or transverse to centerline on fills. Temporary berms shall be graded so as to drain to a compacted outlet at a slope drain. The area adjacent to the temporary berm in the vicinity of the slope drain must be properly graded to enable this inlet to function efficiently and with minimum ponding in this area. All transverse berms required on the downstream side of a slope drain shall extend across the grade to the highest point at approximately a 10-degree angle with a line perpendicular to centerline. The top width of these berms may be wider and the side slope flatter on transverse berms to allow equipment to pass over these berms with minimal disruptions. When practical and until final roadway elevations are approached, embankments should be constructed with a gradual slope to one side of the embankment to permit the placement of temporary berms and slope drains on only one side of the embankment.

B. Slope Drains

1. Slope drains shall consist of stone gutters, fiber mats, plastic sheets, concrete or asphalt gutters, half-round pipe, metal pipe, plastic pipe, flexible rubber, or other

materials which can be used as temporary measures to carry water accumulating in the cuts and on the fills down the slopes prior to installation of permanent facilities or growth of adequate ground cover on the slopes.

2. Fiber matting and plastic sheeting shall not be used on slopes steeper than 4:1, except for short distances of 20 feet or less.

3. All slope drains shall be adequately anchored to the slope to prevent disruption by the force of the water flowing in the drains. The base for slope drains shall be compacted and concavely formed to channel the water or hold the slope drain in place. The inlet end shall be properly constructed to channel water into the slope drain. Energy dissipaters, sediment basins, or other approved devices shall be constructed at the outlet end of the slope drains to reduce erosion downstream. An ideal dissipater would be dumped rock or a small sediment basin, which would slow the water as well as pick up some sediment. All slope drains shall be removed when no longer necessary and the site restored to match the surroundings.

C. Sediment Structures

1. Sediment structures shall be utilized to control sediment at the foot of embankments where slope drains outlet; at the bottom as well as in the ditch lines atop waste sites; in the ditch lines or borrow pits. Sediment structures may be used in most drainage situations to prevent excessive siltation of pipe structures. All sediment structures shall be at least twice as long as they are wide.

2. When use of temporary sediment structures is to be discontinued, all sediment accumulation shall be removed, and all excavation backfilled and properly compacted. The existing ground shall be restored to its natural or intended condition.

D. Check Dams

1. Check dams shall be utilized to retard stream flow and catch small sediment loads. Materials utilized to construct check dams are varied and should be clearly illustrated or explained in the Contractor's erosion control plan.

2. All check dams shall be keyed into the sides and bottom of the channel a minimum depth of 2 feet. A design is not needed for check dams but some typical designs are shown in the standard plans

3. Stone check dams should generally not be utilized where the drainage area exceeds fifty (50) acres. Log and pole structures should generally not be used where the drainage area exceeds five (5) acres.

E. Temporary Seeding and Mulching

1. Seeding and mulching shall be performed in accordance with the Section 32 92 19.21 "Seeding, Fertilizer and Mulch."

F. Brush Barriers

1. Brush barriers shall consist of brush, tree trimmings, shrubs, plants and other approved refuse from the clearing and grubbing operation. The brush barriers shall be constructed approximately parallel to original ground contour. The brush

barrier shall be compressed to an approximate height of 3 to 5 feet and approximate width of 5 to 10 feet. The embankment shall not be supported by the construction of brush barriers.

G. Baled Hay or Straw Erosion Checks

1. Hay or straw erosion checks shall be embedded in the ground 4 to 6 inches to prevent water from flowing under them. The bales shall also be anchored securely to the ground by wooden stakes driven through the bales into the ground. Bales can remain in place until they rot, or be removed after they have served their purpose, as determined by the Engineer. The Contractor shall keep the checks in good condition by replacing broken or damaged bales immediately after damage occurs. Normal debris clean out will be considered routine maintenance.

H. Temporary Silt Fences

1. Temporary silt fences shall be placed on the natural ground, at the bottom of fill slopes, in ditches, or other areas where siltation is a problem. Silt fences are constructed of wire mesh fence with a covering of burlap or some other suitable material on the upper grade side of the fence and anchored into the soil.

2. The Contractor shall be required to maintain the silt fence in a satisfactory condition for the duration of the project or until its removal is requested by the Engineer. The silt accumulation at the fence may be left in place and seeded, removed, etc., as directed by the Engineer. The silt fence becomes the property of the Contractor whenever the fence is removed.

I. Cofferdams

1. Cofferdams shall consist of sandbags placed in stream channel twenty (20') feet upstream and twenty (20') feet downstream of area where work is to be performed in channel. The sandbag cofferdams shall be connected with corrugated metal pipe, HDPE pipe, or corrugated plastic pipe of sufficient size to handle the flow of the channel.

J. Riprap

1. Stone for riprap shall consist of clean or washed field stone or rough unhewn quarry stone of approximately rectangular shape containing no sand, dust or organic materials and shall be the size designated for the class specified. The thickness of the stone layer shall be as specified on the Plans.

2. When using riprap for slope stabilization it shall be designed so that the natural angle of repose of the stone mixture is greater than the gradient of the slope being stabilized.

3. Riprap for channel stabilization shall be designed to be stable for the condition of bank-full flow in the reach of channel being stabilized. Riprap shall extend up the banks of the channel to a height equal to the maximum depth of flow or to a point where vegetation can be established to adequately protect the channel. The size to be used in a channel bend shall extend upstream from the point of curvature and downstream from the point of tangency a distance of at least 5 times the channel bottom width. The riprap shall extend across the bottom and up both sides of the channel.

4. Where riprap is used only for bank protection and does not extend across the bottom of the channel, riprap shall be keyed into the bottom of the channel to a minimum depth equal to the thickness of the blanket and shall extend across the bottom of the channel the same distance.

3.05 MAINTENANCE

A. The temporary erosion control features installed by the Contractor shall be acceptably maintained by the Contractor until no longer needed or permanent erosion control methods are installed. Temporary controls shall subsequently be removed or replaced when directed by the Engineer. Temporary and permanent erosion control features shall be checked after each measurable rainfall and re-established as necessary. All temporary erosion control items shall be removed before the project is accepted, unless otherwise directed by the Engineer. Removed materials shall become the property of the Contractor.

B. If proper control of soil erosion and sedimentation is not being provided by the Contractor, the Engineer may withhold progress estimates until proper control is achieved.

C. In the event that temporary erosion and pollution control measures are required due to the Contractor's negligence, carelessness, or failure to install permanent controls as a part of work as scheduled, and are ordered by the Engineer, such work shall be performed by the Contractor at his own expense.

D. Where the work to be performed is not attributed to the Contractor's negligence, carelessness, or failure to install permanent controls and falls within the specifications for work items that has a contract price, the units of work shall be paid for at the proper contract prices.

E. The Contractor shall maintain project records on stormwater structures as required by regulations.

3.06 EROSION CONTROL OUTSIDE PROJECT AREA

A. Temporary pollution control shall include construction work outside the project area where such work is necessary as a result of construction such as borrow pit operations, haul roads and equipment storage sites. Bid price in such cases shall include all necessary clearing and grubbing, construction incidentals, maintenance, and site restoration when no longer needed.

***** END OF SECTION *****

SECTION 32 92 19.21

SEEDING, FERTILIZER AND MULCH

PART 1 – GENERAL

1.01 DESCRIPTION

A. This item shall consist of seeding the areas shown on the plans or as directed by the Engineer in accordance with these specifications.

B. Seeding will include:

Class I seed ☐
or
Class II seed ☑

C. Erosion Control Blanket ☐

1.02 RELATED WORK

A. Test Reports: Results of seed purity and germination tests.

B. Certificates: Manufacturer's certification that materials meet specification requirements.

1.03 JOB CONDITIONS

A. This work is applicable only to areas disturbed or graded under the construction contract and where no grass occurs on existing lawn areas.

B. Existing Conditions: Perform seeding only after preceding work affecting ground surface is completed.

C. Environmental Requirements:

1. Plant seed on unfrozen soil.

2. Do not perform seeding when wind exceeds 15 mph.

3. Do not seed between calendar dates from October 15th to March 15th.

D. Protection: Restrict foot and vehicular traffic from seeded areas after planting to end of the established period.

PART 2 – PRODUCTS

2.01 SEED

A. The kinds of grass, legume, and cover-crop seed furnished shall be those stipulated below. Seed shall conform to the requirements of Fed. Spec. JJJ-S-181.

1. Class I Seeding:

Seed	Portion by Wt.
Kentucky Bluegrass (Poa Pratensis)	40%
Creeping Red Fescue (Festuca Rubra)	40%
Perennial Ryegrass (Lodium Perenne)	20%

2. Class II Seeding:

Seed shall be Kentucky 31 Tall Fescue	85%
Perennial Ryegrass (Lodium Perenne)	15%

3. Temporary Seeding:

Annual Rye or Wheat	100%

B. Class I and II - All grass seeds shall have a minimum purity of 90% and minimum germination of 80%, and shall be sown at a rate of 50 lbs/acre.

C. Temporary Seeding shall have a minimum purity of 90% and sown at a rate of 150 lbs/acre.

D. Seed shall be furnished separately or in mixtures in standard containers with the seed name, lot number, net weight, percentages of purity and of germination and hard seed, and percentage of maximum weed seed content clearly marked for each kind of seed.

E. Erosion Control Blanket shall be wood excelsior fiber material covered with a photodegradable plastic mesh as manufactured by American Excelsior Company, Arlington, Texas, or approved equal.

F. Erosion Control Blanket shall be installed on all permanently seeded slopes of 3:1 or steeper.

2.02 FERTILIZER

A. Shall be standard commercial fertilizers meeting:

1. FS O-F-241, Type I, Grade A.

2. The percentages of total nitrogen, available phosphoric acid, and water-soluble potash: 19-19-19.

3. Shall be applied at the rate of 300 lbs/acre, and shall meet the specified requirements of the applicable State and Federal laws.

4. Shall be furnished in standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon. No cyanamide compounds or hydrated lime shall be permitted in mixed fertilizers.

B. The fertilizers may be supplied in one of the following forms:

1. A dry, free-flowing fertilizer suitable for application by a common fertilizer spreader.

2. A finely-ground fertilizer soluble in water, suitable for application by power sprayers.

3. A granular or pellet form suitable for application by blower equipment.

2.03 AGRICULTURAL LIMESTONE

A. Agricultural Ground Limestone should be applied at the rate of 3 tons/acre.

2.04 SURFACE EROSION CONTROL MATERIAL

A. Surface erosion control material shall conform to the following:

1. Surface Erosion Control Blanket - Blanket shall be machine produced mat of wood excelsior formed from a web of interlocking wood fibers; covered on one side with either knitted straw blanket-like mat construction; covered with biodegradable plastic mesh; or interwoven biodegradable thread, plastic netting, or twisted kraft paper cord netting.

2. Surface Erosion Control Fabric - Fabric shall be knitted construction of polypropylene yarn with uniform mesh openings ¾ to 1-inch square with strips of biodegradable paper. Filler paper strips shall have a minimum life of 6 months.

3. Surface Erosion Control Net - Net shall be heavy, twisted jute mesh, weighing approximately 1.22 pounds per linear yard and 4-feet wide with mesh openings of approximately 1-inch square.

4. Surface Erosion Control Chemicals - Chemicals shall be high-polymer synthetic resin or cold-water emulsion of selected petroleum resins.

5. Hydrophilic Colloids - Hydrophilic colloids shall be physiologically harmless to plant and animal life without phytotoxic agents. Colloids shall be naturally occurring, silicate powder based, and shall form a water insoluble membrane after curing. Colloids shall resist mold growth.

6. Erosion Control Material Anchors - Erosion control anchors shall be as recommended by the Manufacturer.

PART 3 – EXECUTION

3.01 SOIL FOR REPAIRS

A. Shall be at least of equal quality to that which exists in areas adjacent to the area to be repaired. The soil shall be relatively free from large stones, roots, stumps, or other materials that will interfere with subsequent sowing of seed, compacting, and establishing turf, and shall be approved by the Engineer before being placed.

3.02 ADVANCE PREPARATION AND CLEANUP

A. Yard Areas

1. Shall be Class I Seeding.

2. Shall be raked or otherwise cleared of stones larger than 2-inches in any diameter, sticks, stumps, and other debris, which might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas.

3. Damage by erosion or other causes, shall be repaired by the Contractor. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

4. When construction is completed, the private property owner's facilities and grounds shall be restored to as good or better than their original condition.

B. Farm Land and Highway Right of Ways

1. Shall be Class II Seeding.

2. Shall be raked or otherwise cleared of stones larger than 3-inches in any diameter, sticks, stumps, and other debris, which might interfere with sowing of seed, growth of grasses, or subsequent maintenance of grass-covered areas.

3. Damage by erosion or other causes, shall be repaired by the Contractor. This may include filling gullies, smoothing irregularities, and repairing other incidental damage.

4. When construction is completed, the disturbed areas shall be restored to as good or better than their original condition.

C. An area to be seeded shall be considered a satisfactory seedbed without additional treatment:

1. If it has recently been thoroughly loosened and worked to a depth of not less than 5-inches as a result of grading operations and;

2. If immediately prior to seeding, the top 3-inches of soil is loose, friable, reasonably free from large clods, rocks, large roots, or other undesirable matter, and;

3. If shaped to the required grade.

D. When the area to be seeded is sparsely sodded, weedy, barren and unworked, or packed and hard:

1. Grass and weeds shall first be cut or otherwise satisfactorily disposed of.

2. The soil then scarified or otherwise loosened to a depth not less than 5-inches.

3. Clods shall be broken and the top 3-inches of soil shall be worked into a satisfactory seedbed by disking, or by use of cultipackers, rollers, drags, harrows, or other appropriate means.

3.03 DRY APPLICATION METHOD

A. Fertilizing – Following advance preparations and cleanup, fertilizer shall be uniformly spread at the rate specified.

B. Seeding – Grass seed shall be sown at the rate of 50 lbs. per acre immediately after fertilizing, and the fertilizer and seed shall be raked within the depth range of ⅛ to ¼ inch. Seeds of legumes, either alone or in mixtures, shall be inoculated before mixing or sowing, in accordance with the instructions of the manufacturer of the inoculant. When seeding is required at other than the seasons shown on the plans or in the special provisions, a cover crop shall be sown by the same methods required for grass and legume seeding.

C. Rolling – After the seed has been properly covered, the seed bed shall be immediately compacted by means of an approved lawnroller, weighing 40 to 65 pounds per foot of width for clay soil (or any soil having a tendency to pack), and weighing 150 to 200 pounds per foot of width for sandy or light soils.

3.04 WET APPLICATION METHOD

A. General – The Contractor may elect to apply seed and fertilizer by spraying them on the previously prepared seedbed in the form of an aqueous mixture and by using methods and equipment described herein. The rates of application shall be as specified in Section 3.03 of these specifications. No seed shall be placed on a frozen seedbed.

B. Spraying Equipment – The spraying equipment shall have a container or water tank equipped with a liquid level gauge calibrated to read in increments not larger than 50 gallons over the entire range of the tank capacity, mounted so as to be visible to the nozzle operator. The container or tank shall also be equipped with a mechanical power-driven agitator capable of keeping all the solids in the mixture in complete suspension at all times until used.

1. The unit shall also be equipped with a pressure pump capable of delivering 100 gallons per minute at a pressure of 100 pounds per square inch. The pump shall be mounted in a line, which will recirculate the mixture through the tank whenever it is not being sprayed from the nozzle. All pump passages and pipe lines shall be capable of providing clearance for ⅝ inch solids. The power unit for the pump and agitator shall have controls mounted so as to be accessible to the nozzle operator. There shall be a pressure gauge connected and mounted immediately at the back of the nozzle.

2. The nozzle pipe shall be mounted on an elevated, supporting stand in such a manner that it can be rotated through 360 degrees horizontally and inclined vertically from at least 20 degrees below to at least 60 degrees above the horizontal. There shall be a quick-acting, three-way control valve connecting the recirculating line to the nozzle pipe and mounted so that the nozzle operator can control and regulate the amount of flow of mixture delivered to the nozzle. At least three different types of nozzles shall be supplied so that mixtures may be properly sprayed over distance varying from 20 feet to 100 feet. One shall be a close-range ribbon nozzle, one a medium-range ribbon nozzle, and one a long-range jet nozzle. For case of removal and cleaning, all nozzles shall be connected to the nozzle pipe by means of quick-release couplings.

3. In order to reach areas inaccessible to the regular equipment, an extension hose at least 50 feet in length shall be provided to which the nozzles may be connected.

3.05 MULCHING

This item shall consist of furnishing, hauling, placing, and securing mulch of surfaces indicated on the plans or designated by the Engineer.

A. MULCH MATERIAL – Acceptable mulch shall be the material listed below or any approved locally available material that is similar to those specified. Low grade, musty, spoiled, partially rotted, hay, or straw will be acceptable. Mulch materials, which contain matured seed of species, which would volunteer and be detrimental to the proposed overseeding, or to surrounding farm land, will not be acceptable. Straw or other mulch material which is fresh and/or excessively brittle, or which is in such an advanced stage of decomposition as to another or retard the planted grass, will not be acceptable.

1. Hay – Shall be native hay, Sudan grass hay, broomsedge hay, legume hay, or similar hay or grass clippings.

2. Straw – Shall be the threshed plant residue of oats, wheat, barley, rye, or rice from which grain has been removed.

B. APPLICATION

1. Before spreading mulch, all large clods, stumps, stones, brush, roots, and other foreign material shall be removed from the area to be mulched. Mulch shall be applied immediately after seeding. The spreading of the mulch may be by hand methods, blower, or other mechanical methods, provided a uniform covering is obtained.

2. Mulch material shall be furnished, hauled, and evenly applied on the area shown on the plans or designated by the Engineer. Straw or hay shall be spread over the surface to a uniform thickness at the rate of 2 to 3 tons per acre (approximately 80 standard bales) to provide a loose depth of not less than 1 ½ inches nor more than 3 inches. Other organic material shall be spread at the rate directed by the Engineer. Mulch may be blown on the slopes and the use of cutters in the equipment for this purpose will be permitted to the extent that at least 95% of the mulch in place on the slope shall be 6 inches or more in length. When mulches applied by the blowing method are cut, the loose depth in place shall be not less than 1 inch, nor more than 2 inches.

C. SECURING MULCH

1. The mulch shall be held in place by one of the following methods:

a. If the "Peg and String" method is used, the mulch shall be secured by the use of stakes or wire pins driven into the ground on 5-foot centers or less. Binder twine shall be strung between adjacent stakes in straight lines and crisscrossed diagonally over the mulch, after which the stakes shall be firmly driven nearly flush to the ground to draw the twine down tight onto the mulch.

b. Light disking to produce a very thin covering of topsoil.

c. Asphalt emulsion applied at a rate of 60 gallons per ton of mulch.

d. Place mulching cloth over seeded area with slopes steeper than 2 to 1.

D. SURFACE EROSION CONTROL MATERIAL

1. Where indicated or as directed, surface erosion control material shall be installed in accordance with Manufacturer's instructions. Placement of the material shall be accomplished without damage to installed material or without deviation to finished grade.

E. MAINTENANCE OF SEEDED AREAS

1. The Contractor shall protect seeded areas against traffic or other use by warning signs or barricades, as approved by the Engineer. Surfaces gullied or otherwise damaged following seeding shall be repaired by regarding and reseeding as directed. The Contractor shall mow, water as directed, and otherwise maintain seeded areas in a satisfactory condition until final inspection and acceptance of the work.

2. When either the dry or wet application method outlined above is used for work done out of season, between October 15 and March 15, it will be required that the Contractor establish a good stand of grass of uniform color and density to the satisfaction of the Engineer. If, at the time when the contract has been otherwise completed it is not possible to make an adequate determination of the color, density, and uniformity of such stand of grass, payment for the unaccepted portions of the areas seeded out of season will be withheld until such time as these requirements have been met.

3.06 EROSION CONTROL EXCELSIOR BLANKET

A. Installation

1. Install Erosion Control Blanket on permanently seeded areas constructed on a slope of 3 feet horizontal to one foot vertical on slopes when indicated as a construction requirement in Part 1.01.

2. Properly prepare, fertilize and seed area to be covered before blanket is applied. When the blanket is unrolled, netting should be on top and fibers in contact with the soil over the entire area. In ditches, apply blankets in the direction the water flows, butting them at the ends and sides and then stapling. On slopes, apply blankets either horizontally or vertically to slope butt ends and sides and then staple. It is not necessary to dig check slots, anchor ditches or bury ends of blankets unless specified in design specifications.

3. Install material in accordance with manufacturer's recommendation.

4. Secure blanket material with U shaped 0.091" diameter wire with legs six inches in length. Drive staples vertically into the ground at six foot intervals or slopes and four foot intervals along ditches.

5. Use a common row of staples on adjoining blankets.

PART 4 – QUALITY ASSURANCE

4.01 INSPECTION

A. Within five (5) days after acceptance of the bid, the Engineer shall be notified of sources and quantities of mulch materials available and the Contractor shall furnish him with representative samples of the materials to be used. These samples may be used as standards with the approval of the Engineer and any materials brought on the site, which do not meet these standards shall be rejected.

B. Seeding contractor shall supply evidence of quantity and quality of materials used by submitting delivery tickets for seed and fertilizer.

***** END OF SECTION *****